



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

February 11, 2008

EA-07-282

J. V. Parrish (Mail Drop 1023)
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SUBJECT: COLUMBIA GENERATING STATION - NRC INTEGRATED INSPECTION
REPORT 05000397/2007005 and OFFICE OF INVESTIGATION
REPORT 4-007-038

Dear Mr. Parrish:

On December 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Columbia Generating Station. The enclosed inspection report documents the inspection results, which were discussed on January 10, 2008, with Mr. Gambhir and other members of your staff.

The inspection 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-identified finding and four self-revealing findings of very low safety significance (Green). Four of these findings were determined to involve violations of NRC requirements. This report also documents one licensee-identified Severity Level IV non-cited violation (NCV) of NRC requirements (EA-07-282). Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. However, because of the very low safety significance and because these violations were entered into your corrective action program, the NRC is treating the findings as NCVs consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, 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, its enclosure, and your response (if any) 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 Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Claude E. Johnson, Chief
Project Branch A
Division of Reactor Projects

Docket: 50-397
License: NPF-21

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SUNSI Review Completed: CEJ ADAMS: Yes No Initials: CEJ
 Publicly Available Non-Publicly Available Sensitive Non-Sensitive
 R:\ REACTORS\ COL\2007\COL2007-05RP-ZKD.wpd ADAMS ML080430365

SRI:DRP/A	RI:DRP/A	SPE:DRP/A	BC:DRP/A	BC:DRS/EB1
ZDunham	RCohen	TFarnholtz	CJohnson	RBywater
/RA electronic/	/RA electronic/	/RA/	/RA/	/RA/
2/08/08	2/08/08	2/4/08	2/11/08	1/31/08
BC:DRS/PSB	BC:DRS/OB	BC:DRS/EB2	ACES	
MShannon	RLantz	LSmith	MVasquez	
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-397
License: NPF-21
Report: 05000397/2007005
Licensee: Energy Northwest
Facility: Columbia Generating Station
Location: Richland, Washington
Dates: September 29, 2007 through December 31, 2007
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Approved By: C. E. Johnson, Chief, Project Branch A, Division of Reactor Projects
ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUMMARY OF FINDINGS

IR05000397/2007005; 09/29/2007 - 12/31/2007; Columbia Generating Station; Equipment Alignments, Operability Evaluations, Access Control to Radiologically Significant Areas, ALARA Planning and Controls, Other Activities.

The report covered a 13-week period of inspection by resident and regional inspectors. Four green noncited violations, one green finding, and one Severity Level IV noncited violation were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or 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. An NRC identified noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for Energy Northwest's failure to follow Procedure PPM 10.2.53, "Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks," Revision 26. Specifically, a protective cover (type of scaffold) was constructed over a safety-related battery with portions of the cover installed within 2 inches of the battery requiring an engineering evaluation to be conducted to assess the seismic qualification of the installation. Contrary to the procedure, no engineering evaluation was conducted until prompted by the inspectors. Although a subsequent evaluation determined that the installed cover was acceptable, Energy Northwest determined that historically battery protective covers had always been installed without a supporting engineering evaluation.

This finding was more than minor because it was a human performance error which affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Although the licensee subsequently assessed the as-found installation of the protective cover as acceptable during mock-up testing, the inspectors concluded that the failure to evaluate past installations in accordance with Procedure PPM 10.2.53, was not commensurate with ensuring the reliability and availability of Battery E-B1-1. This was determined to be consistent with NRC Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, Example 4.a. for being more than minor risk significance because Energy Northwest had routinely failed to perform the requisite engineering evaluation during past installations. The finding was determined to be of very low risk significance (Green) because no actual loss of safety function occurred and the finding did not screen as potentially risk significant due to external events. Specifically, the as-found installation of the protective cover was

determined to not adversely affect seismic qualification of the battery. A crosscutting aspect in human performance with a work practices component [H.4.b] was identified in that Energy Northwest failed to follow Procedure PPM 10.2.53 on December 3, 2007, resulting in a failure to conduct an engineering analysis associated with a safety-related battery protective cover (Section 1R04).

- Green. A self-revealing Green noncited violation of Technical Specification 5.4.1.a (2 examples) was identified for failure to provide adequate procedures for shutdown of the high pressure core spray diesel generator resulting in inoperability of the diesel generator. Specifically, Procedure OSP-ELEC-C703, "HPCS Diesel Generator AC Source Operability Check," Revision 8, and Procedure TSP-DG-E501, "Simultaneous Start of All Three Diesel Generators," Revision 2, were inadequate in that each procedure directed shutting down the high pressure core spray diesel generator by placing the diesel engine control switch to STOP resulting in an over excited condition of the generator and subsequent clearing of relay and metering circuit fuses and inoperability of the electronic governor. Performance of Procedure OSP-ELEC-C703 on October 19, 2007, resulted in the inoperability of the diesel generator until discovery of the blown fuses on November 8, 2007 and subsequent troubleshooting and repairs were completed on November 10, 2007. Performance of Procedure TSP-DG-E501, on May 3, 2005, also resulted in the inoperability of the high pressure core spray diesel generator through June 5, 2005, when the cleared fuses were identified although the diesel generator was not required to be operable due to the plant being in Modes 4 and 5 at the time.

This self-revealing finding was more than minor because the finding had an attribute of procedure quality which affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) because, although the high pressure core spray diesel generator's electronic governor was inoperable, the diesel generator was capable of completing its safety function of supplying rated electrical power to the high pressure core spray pump and associated loads on its backup mechanical governor. Additionally, the finding was not associated with a qualification deficiency and was not risk significance due to external initiating events. A crosscutting aspect in human performance with a resources component [H.2.c] was identified in that Energy Northwest failed to provide adequate test procedures resulting in subsequent inoperability of the high pressure core spray diesel generator (Section 1R15).

- Severity Level IV. During a routine audit, the licensee identified that a fire watchstander failed to enter some plant areas required to complete portions of 2 hourly fire watch rounds on both April 30 and May 7, 2007. An NRC Office of Investigation Report 4-2007-038 concluded that the individual willfully failed to complete portions of the required compensatory fire tours and inaccurately indicated on the fire tour log, an NRC-required record that the fire watches had

been conducted. This was a violation of 10 CFR 50.9 and Columbia Generating Station License Condition 2.C(14), "Fire Protection Program," (EA-07-282).

Failure to complete compensatory fire watches required by the fire protection program and falsifying fire watch records was a performance deficiency. This finding was of more than minor significance because it had the potential to impact the NRC's ability to perform its regulatory function, since required records were falsified. The finding is associated with the Mitigating Systems Cornerstone attribute of protection against external events. This finding had very low safety significance since proper tours were completed within 2 hours. Willful violations are a particular concern to the Commission because its regulatory program is based on licensees and their employees acting with integrity. However, in an effort to encourage licensees to act responsibly in the identification and correction of such violations, the NRC may choose to disposition certain violations by issuing a noncited violation if the licensee identified and corrected the violation. Therefore, in accordance with the NRC Enforcement Policy, this violation is being dispositioned as a Severity Level IV noncited violation because the licensee promptly identified and reported this violation and took appropriate corrective action. This issue was entered into the corrective action program under Condition Report 2-07-05033 (Section 4OA5.1).

Cornerstone: Occupational Radiation Safety

- Green. The inspector reviewed a self-revealing, noncited violation of 10 CFR 20.1501(a) resulting from the licensee's failure to perform airborne radioactivity surveys during a work activity. The failure was discovered after five contract scaffold workers caused the personnel contamination monitors to alarm as they attempted to exit the radiologically controlled area. The workers had become internally contaminated and radiation protection personnel discovered there had been no air sampling conducted to verify airborne radioactivity concentrations in the work area. The licensee found a similar event had occurred in 2005 and the corrective action was ineffective to prevent recurrence because it lacked specific contamination control rules for areas with high levels of contamination. The licensee was developing more specific contamination controls.

This finding was greater than minor because it was associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective in that the lack of knowledge of radiological conditions could increase personnel dose. The inspector determined that the finding was of very low safety significance because it did not involve: (1) an as low as reasonably achievable finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. Additionally, this finding had a crosscutting aspect in the problem identification and resolution area, associated with the corrective action program component, because the licensee did not take appropriate corrective actions to address safety issues in a timely manner [P1.d] (Section 2OS1).

- Green. The inspector reviewed a self-revealing, noncited violation of Technical Specification 5.4.1 because a worker failed to use the correct radiation work permit and obtain a briefing of the dose rates in the work area. The worker had been working in the drywell, but entered the steam tunnel without changing radiation work permits or obtaining a briefing on the radiological hazards in the steam tunnel. The licensee was alerted to the situation when the worker's electronic dosimeter alarmed. The licensee counseled the worker on the proper practice.

This finding was greater than minor because it was associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective in that the lack of knowledge of radiological conditions could increase personnel dose. The inspector determined that the finding was of very low safety significance because it did not involve: (1) an as low as reasonably achievable finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. Additionally, this finding had a crosscutting aspect in the human performance area, associated with the work practices component, because the worker did not use human error prevention techniques such as self-checking (H4.A) (Section 2OS1).

- Green. The inspector reviewed a self-revealing ALARA finding because performance deficiencies resulted in the collective dose of a work activity exceeding five person-rem and the legitimate dose estimate by more than 50 percent. The licensee estimated Radiation Work Permit 30001874, "R18 RX RRC/RWCU Chemical Decontamination," would accrue 5.783 person-rem; however, the actual dose was 9.143 person-rem. The primary reason for exceeding the estimated dose was the need to perform work activities more than once. Lack of adequate planning and errors by craft workers resulted in the need to repeat activities, thereby increasing collective dose. Corrective action is being evaluated.

This finding is greater than minor because it is associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective in that it caused increased collective radiation dose. The inspector determined this finding had very low safety significance. Although the finding involved ALARA planning and work controls, the licensee's latest, official 3-year rolling average collective dose was less than 240 person-rem. Additionally, this finding had a crosscutting aspect in the human performance area, associated with the work control component, because work activities were not planned taking into account job site conditions [H3.a] (Section 2OS2).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Columbia Generating Station operated at 100 percent power for the entire inspection period with the exception of brief reductions in power to support maintenance and testing and a reduction in power to approximately 75 percent power on November 24, 2007, in response to a reactor feedwater heat exchanger which auto-isolated due to a failed level detector.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather (71111.01)

.1 Readiness For Seasonal Susceptibilities

a. Inspection Scope

The inspectors completed a review of the licensee's readiness of seasonal susceptibilities involving extreme low temperatures. The inspectors: (1) reviewed plant procedures, the Updated Safety Analysis Report, and Technical Specifications to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the systems listed below to ensure that adverse weather protection features (heat tracing, space heaters, weatherized enclosures, temporary chillers) were sufficient to support operability, including the ability to perform safe shutdown functions; (3) evaluated operator staffing levels to ensure the licensee could maintain the readiness of essential systems required by plant procedures; and (4) reviewed the corrective action program to determine if the licensee identified and corrected problems related to adverse weather conditions.

- Condensate Storage Tanks on November 16, 2007
- Circulating Water Pump House on November 6, 2007

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors: (1) walked down portions of the systems listed below and reviewed plant procedures and documents to verify that critical portions of the selected systems

were correctly aligned; and (2) compared deficiencies identified during the walk down to the licensee's corrective action program to ensure problems were being identified and corrected:

- Containment Instrument Air on October 12, 2007
- Control Room Emergency AC on November 18, 2007
- 125 VDC Battery E-B1-1 on December 3, 2007

The inspectors completed three samples.

b. Findings

Introduction: An NRC identified noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for Energy Northwest's repetitive failure to conduct engineering analysis in accordance with the station's scaffold procedure as it relates to protective covers constructed over safety-related batteries. A crosscutting aspect in human performance with a work practices component was also identified.

Description: On December 3, 2007, during a walkdown of the Division 1 125 VDC safety-related Battery E-B1-1, the inspectors noted that a wood platform had been constructed over two banks of battery cells. The platform consisted of fire retardant treated lumber with a rectangular plywood top attached to four 2"X4" leg supports. One of the leg supports was held in place by the installation of two wood wedges which secured the leg support against the battery's seismic storage rack bracing. Additionally, the plywood top had two notches which had been cut to accommodate the terminal cabling to the battery. The inspectors noted that the plywood platform was in contact with one of the terminal cables.

The inspectors questioned how the platform was evaluated to support seismic qualification of the battery since no scaffold tag or permit indicating acceptability of the platform to meet Energy Northwest installation requirements could be located. The inspectors did note a Work Order (WO) 01130428-20 tag attached to a ladder providing access to the overhead above the battery. The inspectors informed the control room staff of the observed conditions and requested any analysis confirming the acceptability of the platform installation and any impact on seismic qualification for Battery E-B1-1. Subsequent to the inspectors inquiries, engineering staff examined the platform and preliminarily concluded, based on engineering judgement, that the platform was not seismically qualified. Control room staff declared Battery E-B1-1 inoperable pending removal of the platform. Approximately 34 minutes later, Battery E-B1-1 was declared operable following removal of the platform.

During followup inspection, the inspectors noted that the platform was constructed earlier on December 3, 2007, at approximately 11:45 a.m. per WO 01130428-20. The platform was installed to protect the battery from dropped items associated with planned fire damper inspections and maintenance located in the overhead above the battery as provided in Procedure PPM 10.2.53, "Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding

Racks,” Revision 26, Section 4.2.1, “Precautions and Limitations for Scaffolding.” This section provided, in part, that when working above the station batteries, erect a protective nonconductive deck above (not on) the batteries and to use nonconductive supports. Additionally, Procedure 10.2.53, Section 7.1.9, provided in part that scaffold material used for structures other than access/work platforms to comply with Section 7.1.6. Section 7.1.6.i provided in part that unless evaluated by engineering to keep all scaffold items greater than or equal to 2 inches away from QC-1 equipment. Contrary to this requirement, no engineering evaluation was conducted, until prompted by the inspectors’ questions, although the plywood top physically made contact with one of the battery terminal cables, a QC-1 component. Energy Northwest documented the issue in Problem Evaluation Report (PER) 207-0443.

Energy Northwest subsequently constructed a mockup of the battery seismic bracing and the wood platform, conducted an engineering analysis, and concluded that the platform in the as-found condition would not have adversely affected the seismic qualifications of Battery E-B1-1. However, Energy Northwest also determined that at least since 1994 that similarly constructed wood platforms had been constructed over Battery E-B1-1 every 2 years to facilitate inspection of fire dampers located in the overhead without an engineering evaluation being conducted to determine the adequacy of the installation. Energy Northwest also provided that similar protective covers had also been constructed over the station’s other safety-related batteries without a corresponding engineering evaluation being conducted.

Analysis: The performance deficiency associated with this finding is the failure of Energy Northwest to adhere to Procedure PPM 10.2.53 to keep all scaffold items greater than or equal to 2" away from QC-1 equipment during installation of the protective cover over Battery E-B1-1 unless evaluated and accepted by engineering. Additionally, since 1994, Energy Northwest had constructed similar protective covers over Battery E-B1-1 and other safety-related batteries without supporting engineering analysis to assure that seismic qualification was maintained. This finding was more than minor because it was a human performance error which affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Although the licensee assessed the as-found installation of the protective cover as acceptable during mock-up testing, the inspectors concluded that the failure to evaluate past installations in accordance with Procedure PPM 10.2.53 was not commensurate with ensuring the reliability and availability of Battery E-B1-1. This was determined to be consistent with NRC Manual Chapter 0612, “Power Reactor Inspection Reports,” Appendix E, Example 4.a., for being more than minor risk significance because Energy Northwest had routinely failed to perform the requisite engineering evaluation during past installations. The finding was determined to be of very low risk significance (Green) because no actual loss of safety function occurred and the finding did not screen as potentially risk significant due to external events. Specifically, the as-found installation of the protective cover was determined to not adversely affect seismic qualification of the battery. A crosscutting aspect in human performance with a work practices component [H.4.b] was identified in that Energy Northwest failed to follow Procedure PPM 10.2.53 on December 3, 2007, resulting in a failure to conduct an engineering analysis associated with a safety-related battery protective cover.

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," provides, in part, that activities affecting quality shall be accomplished in accordance with documented instructions appropriate to the circumstances. Contrary to this requirement, on December 3, 2007, Energy Northwest failed to adhere to Procedure PPM 10.2.53 resulting in the failure to conduct an engineering evaluation to assess the adequacy of scaffolding (protective cover) over a safety-related battery. Additionally, Energy Northwest had historically constructed similar scaffold (protective covers) over the same and other safety-related batteries since 1994 without a corresponding engineering evaluation. Because this finding was of very low safety significance and was entered into the licensee's corrective action program as PER 207-0443, this violation is being treated as an NCV, consistent with Section VI.A.1 of the Enforcement Policy (NCV 05000397/2007005-01; Failure to Conduct Engineering Evaluation in Accordance with Scaffold Procedure). Energy Northwest implemented corrective actions to assess how battery protective covers should be constructed and treated and planned to revise Procedure PPM 10.2.53 to enhance instructions associated with protective covers.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors walked down the plant areas listed below to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features; and (7) reviewed the corrective action program to determine if the licensee identified and corrected fire protection problems.

- Fire Area DG-2/1, Diesel Generator Room 1, on October 2, 2007
- Fire Area R-21, South Valve and Pipe Space 522' Reactor Building, on October 9, 2007
- Fire Area R3, High Pressure Core Spray Pump Room on October 16, 2007
- Fire Area ASD, Adjustable Speed Drive Building, on November 14, 2007

- Fire Area R-4, Residual Heat Removal (RHR) Pump Room B, on December 12, 2007
- Fire Area R-5, RHR Pump Room A, on December 12, 2007

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors: (1) reviewed the Updated Safety Analysis Report, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; (2) reviewed the corrective action program to determine if the licensee identified and corrected flooding problems; (3) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (4) walked down the below listed areas to verify, as applicable, the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms, and control circuits, and (f) temporary or removable flood barriers.

- 4160 AC Switch Gear Rooms Division 1 and 2 on October 10, 2007

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Biennial Heat Sink Performance

.1 Performance of Testing, Maintenance, and Inspection Activities

a. Inspection Scope

Inspection Module 71111.07, "Heat Sink Performance," requires that two to three safety-related heat exchangers, either directly or indirectly connected to the safety-related service water system, be reviewed to ensure they are either tested or

inspected and cleaned. The inspectors selected the following three heat exchangers that were ranked high in the plant specific risk assessment and are connected to the safety-related service water system:

- Engineered safety feature lube oil coolers for the residual heat removal pumps
- Residual Heat Removal heat exchanger
- Room coolers for the emergency core cooling system pump rooms

For the heat exchangers directly connected to the safety-related service water system, the inspectors reviewed whether testing, or inspection and cleaning, and maintenance, and the fouling monitoring program provided sufficient controls to ensure proper heat transfer. The inspectors reviewed chemical controls used to avoid fouling, heat exchanger testing results, and inspection and cleaning results.

For the chosen heat exchangers, the inspectors verified the proper extrapolation of test conditions to design conditions, appropriate use of test instrumentation, and appropriate accounting for instrument inaccuracies. The inspectors reviewed the methods and results of heat exchanger inspection and cleaning, verified that the methods used to inspect and clean were consistent with industry standards, and ensured that the as-found results were appropriately dispositioned such that the final conditions were acceptable. Additionally, the inspectors verified that the licensee appropriately trended these inspection and cleaning results, assessed the causes of the trends, and took necessary actions for any step changes in these trends.

The inspectors completed three inspection samples.

b. Findings

No findings of significance were identified.

.2 Verification of Conditions and Operations Consistent with Design Bases

a. Inspection Scope

For the selected heat exchangers, the inspectors verified that the licensee established heat sink and heat exchanger conditions and operation that were consistent with the design assumptions. Specifically, the inspectors reviewed the applicable calculations to ensure that the thermal performance test acceptance criteria for the heat exchangers were being applied consistently throughout the calculations. In addition, the inspectors reviewed test data for the heat exchangers and design and vendor-supplied information to ensure that the heat exchangers were within their design bases.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspector verified that the licensee had entered significant heat exchanger/heat sink performance problems into the corrective action program. The inspector reviewed approximately 15 condition reports (CRs), which are listed in the attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Annual Inspection

a. Inspection Scope

The inspector reviewed the annual operating test results for 2007. Since this was the first half of the biennial requalification cycle, the licensee was not required to administer a written examination. These results were assessed against the Standards in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, and Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." This review included the test results for a total of 7 crews composed of 45 licensed operators, which included: shift-standing senior operators, staff senior operators, shift-standing reactor operators, and staff reactor operators. There was 1 crew failure and 1 individual failure on the simulator scenarios. The failures were remediated prior to resuming licensed duties.

The inspector completed one sample.

b. Findings

No findings of significance were identified.

.2 Quarterly Sample

a. Inspection Scope

On October 4, 2007, the inspectors observed testing and training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved a hydraulic anticipated transient without scram with only one standby liquid control pump available, and failure of a reactor feedwater pump.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Quarterly Review

a. Inspection Scope

The inspectors reviewed the maintenance activities listed below to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the Maintenance Rule, 10 CFR Part 50, Appendix B, and the Technical Specifications.

- WO 01144220, "Diesel Generator No. 2 Turbocharger Failure and Replacement," on October 25, 2007
- WR 29064091, "COND-LS-41B/COND-LT-40B Apply Sealant/Caulking to Housing," on October 29, 2007

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation Reviews

a. Inspection Scope

The inspector reviewed the Columbia Generating Station report documenting the last periodic evaluation in accordance with 10 CFR 50.65(a)(3), which was the licensee's "Maintenance Rule Periodic Assessment" for the period from January, 2006 through June 2007.

The inspector reviewed the monitoring of risk significant SSCs with degraded performance to assess the effectiveness of the licensee's evaluations and the resulting corrective actions. The performance monitoring of nonrisk-significant functions using plant level criteria was also reviewed.

The inspector evaluated whether the report contained adequate assessment of the performance of the Maintenance Rule program as well as conformance with applicable

programmatic and regulatory requirements. To accomplish this, the inspector verified that the licensee appropriately and correctly addressed the following attributes in the assessment report:

- Program treatment of nonrisk-significant SSC functions monitored against plant level performance criteria
- Program adjustments made in response to unbalanced reliability and availability
- Application of industry operating experience
- Performance review of Category (a)(1) systems
- Evaluation of the bases for system category status change (e.g., (a)(1) to (a)(2) or (a)(2) to (a)(1))
- Effectiveness of performance and condition monitoring at component, train, system, and plant levels
- Review and adjustment of definitions of functional failures

Inspection Procedure 71111.12 Triennial, "Maintenance Effectiveness," requires a minimum sample of four SSCs. The inspector reviewed four high risk systems and one additional structure. The inspection sample consisted of the following:

- Standby Service Water System
- Emergency Diesel Generators
- Low Pressure Core Spray System
- Reactor Core Isolation Cooling System
- Suppression Chamber

The inspector reviewed the: (1) evaluations of the balance of reliability and unavailability for maintenance rule functions, (2) consideration of industry operating experience, (3) assessment and management of risk related maintenance activities, and (4) use of insights from the probabilistic risk assessment to support the maintenance rule program.

The inspectors completed the five samples listed above.

b. Findings

Introduction: The inspectors identified an unresolved item for failure to perform adequate monitoring of the condition of three structures. The suppression chamber, the standby service water spray ponds, and condensate storage tank were within the scope of the maintenance rule, but the condition monitoring that was being done did not include the submerged portions of these structures, which is critical to the safety function. Until the submerged portions of these structures are examined, the inspectors cannot determine the safety significance, therefore, this issue is unresolved.

Description: The standby service water system spray ponds, the suppression chamber, and the condensate storage tank structures were within the scope of the maintenance rule. These structures were scheduled for periodic monitoring structural integrity and these baseline and periodic inspections were performed. However, the inspectors discussed the scope of these inspections with the engineer who performed them. The engineer stated that the inspection credited consisted of a walkdown of the visible portions of each of these structures above the water level. The inspectors noted that these inspections provided little valuable information as to the condition of the more critical portions of these structures in that cracks or leaks underwater could challenge their design basis if left undetected.

The licensee used Technical Services Instruction TI 4.23, "Maintenance Rule Structural Baseline Inspections," Revision 1, to implement the periodic monitoring of structures as required by 10 CFR 50.65. Technical Services Instruction TI 4.23, Attachment 1, Section 1.B, directed the user to review structures for the following attributes: Degradations, such as:

- Leakage/seepage
- Rust
- Cracking
- Spalling
- Separation

Because the structural monitoring did not perform an inspection of the portions of these structures most susceptible to these types of degradations that could affect the safety function of the structures, the inspectors concluded that the engineers performed inadequate monitoring of these structures since leakage and seepage could not be detected above water level.

The licensee stated that they had previously drained the spray ponds to perform repairs on the suction piping. The craftsmen working on the piping did not notice any gross deficiencies with the spray pond structures. However, no close examination of the lower surfaces was scheduled nor could be found.

The licensee had not performed nor scheduled condition monitoring, inspection or preventative maintenance (since receiving an operating license in 1983) of the submerged portion of the suppression chamber, the standby service water spray ponds, and condensate storage tank. Although the licensee performed some monitoring of these structures, failure to perform monitoring of the submerged portion of these structures could result in undetected cracks or leakage that could prevent them from meeting their design basis functions.

Analysis: Failure to perform adequate condition monitoring for safety-related structures within the scope of the maintenance rule and in accordance with licensee technical instructions is a performance deficiency and affects the Mitigating Systems Cornerstone. However, the inspector was unable to determine whether the performance deficiency involved degradation of the structures. In order to assess the significance of this issue, additional information is needed to determine whether degradation exists. The

inspectors will review the results of the next inspection that includes the submerged portions of these structures.

Enforcement: The suppression chamber, the standby service water spray ponds, and condensate storage tank are structures within the scope of the Maintenance Rule. These structures were all scheduled for periodic monitoring but the licensee's monitoring consisted of walkdowns of the above water portions of these structures, yielding little information concerning the actual condition of the structures' ability to meet their intended safety function. Because the licensee performed some monitoring of these structures, this performance deficiency did not rise to the level of a violation of the Maintenance Rule. Until the submerged portions of these structures are examined, the inspectors cannot complete the inspection to determine the safety significance, therefore, this issue is considered an unresolved item (URI 05000397/2007005-02, Failure to perform adequate structural monitoring of submerged structures).

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

.1 Risk Assessment and Management of Risk

a. Inspection Scope

The inspectors reviewed the below listed assessment activities to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- WO 01128838, "Diesel Generator 1 Extended Maintenance Outage," dated October 1-6, 2007
- WO 01145019, "Standby Gas Treatment Out-of-Service in Conjunction with RCIC Planned Maintenance," dated November 26, 2007
- WO 01115163, "Complete Overhaul of ROA-FN-1B," dated November 20, 2007

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Emergent Work Control

a. Inspection Scope

The inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergent work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the corrective action program to determine if the licensee identified and corrected risk assessment and emergent work control problems.

- WO 01144181, "Diesel Generator No. 2 Turbocharger Replacement," dated October 21, 2007
- WO 01146619, "4160 VAC Breaker Inspect Cam Shaft Discs in Place," dated December 13, 2007

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plants status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the Updated Safety Analysis Report and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any Technical Specifications; (5) used the significance determination process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- CR 2-07-09031, "PI-VX-253 Leakby During CMS-SR-20 Replacement," dated October 9, 2007
- PER 207-0411, "HPCS-GEN-DG3 Failed to Indicate Voltage and Frequency at Rated Condition," dated November 11, 2007

- CR 2-07-10448, "DCW-P-1C Flange Leak at 32 Drops per Minute," dated December 7, 2007

The inspectors completed three samples.

b. Findings

Introduction: A self-revealing Green NCV of Technical Specification 5.4.1.a (two examples) was identified for failure to provide adequate procedures for shutdown of the high pressure core spray diesel generator resulting in inoperability of the diesel generator. A crosscutting aspect in human performance with a resources component was also identified.

Description: On November 8, 2007, the high pressure core spray (HPCS) Diesel Generator (DG3), which supplies safety-related power to the HPCS pump when offsite power is unavailable, failed to indicate voltage and frequency during performance of Surveillance Procedure OSP-ELEC-M703, "HPCS Diesel Generator Monthly Operability Test," Revision 32. Procedure OSP-ELEC-M703 started DG3 at idle speed for warm up of the engine and then increased speed and placed the electronic governor in control (the diesel engine control switch is taken from maintenance to automatic). Normally when the electronic governor is placed in service, the exciter field flashes and generator terminal voltage is developed. In this instance, there was no indication of output voltage or frequency when the engine control switch was taken to automatic. Engineering staff performed a walk down of the diesel engine and control panel and observed normal exciter field current and field voltage, indicating that the generator field flashed as designed and that normal expected terminal voltage developed. DG3 was then shutdown and cooled down. A subsequent investigation by Energy Northwest revealed that four fuses on the primary side of two potential transformers had cleared. The potential transformers provided the local, remote, and computer data indications for diesel operation as well as providing power to the electronic governor. Energy Northwest declared DG3 inoperable as a result of the power loss to the electronic governor and entered the issue into the corrective action program in PER 207-0411. The cleared fuses were subsequently replaced and DG3 was successfully started. Energy Northwest declared DG3 operable on November 10, 2007.

A subsequent investigation by Energy Northwest determined that the cause of the cleared fuses was due to an inadequate procedure. Specifically, Procedure OSP-ELEC-C703, "HPCS Diesel Generator AC Source Operability Check," Revision 8, which had been used for the previous DG3 start and shutdown on October 19, 2007, shutdown DG3 by placing the diesel engine control switch to STOP. Shutting down the diesel in this manner resulted in a failure to remove the generator excitation field during shutdown of the diesel causing an excessive over excitation (Volts per Hertz) condition saturating the potential transformers and clearing the fuses. Energy Northwest determined that Procedure OSP-ELEC-C703 was revised on February 23, 2006, to incorporate this method of shutting down the diesel. The previous revision shutdown DG3 by depressing the Emergency Shutdown pushbutton. Shutting down DG3 in this manner assured collapse of the excitation field therefore avoiding over excitation of the generator.

Energy Northwest also determined that DG3 also exhibited a similar failure on June 5, 2005, during which two of the potential transformer fuses were found cleared following a start of DG3 per Procedure OSP-ELEC-M703. At the time of the 2005 event, Energy Northwest did not identify the cause of the cleared fuses as documented in CR 2-05-04743, replaced the affected fuses and declared DG3 operable following a successful run of DG3. Energy Northwest concluded in their evaluation of PER 207-0411 that the failure of DG3 in 2005 was actually caused by a similar over excitation of the generator during the previous shutdown of DG3 on May 3, 2005, resulting in the two cleared fuses and subsequent failure of DG3 to start properly on June 5, 2005. DG3 was shutdown on May 3, 2005, per Procedure TSP-DG-E501, "Simultaneous Start of All Three Diesel Generators," Revision 2, by placing the diesel engine control switch to STOP, therefore resulting in an over excited condition of the generator and subsequent clearing of the two fuses.

Energy Northwest did not identify any other deficient procedures and determined that all other DG3 procedures directed shutdown of the diesel by depressing the Emergency Shutdown pushbutton, therefore assuring collapse of the generator field and preventing an over excitation of the generator. Additionally, Energy Northwest concluded that the station's other two diesel generators were not susceptible to the same failure due to distinct design differences between the other diesel generators and DG3.

Energy Northwest determined that, although DG3 was inoperable as a result of the cleared fuses due to the loss of function of the electric governor, a backup mechanical governor which did not rely on power from the metering and relay circuit was functional and would have assured that DG3 would have started and performed its safety function if called upon during a design basis accident.

Analysis: The failure of Energy Northwest to provide adequate instructions for shutdown of the DG3 in Procedures OSP-ELEC-C703 and TSP-DG-E501 is a performance deficiency. Specifically, each procedure directed the shutdown of DG3 by placing the diesel engine control switch to STOP resulting in an over excitation of the generator and subsequent clearing of metering and relay circuit fuses. This self-revealing finding was more than minor because the finding had an attribute of procedure quality which affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) because DG3 was capable of completing its safety function of supplying rated electrical power to the HPCS pump and associated loads on its mechanical governor. Additionally, the finding was not associated with a qualification deficiency and was not risk significance due to external initiating events. A crosscutting aspect in human performance with a resources component [H.2.c] was identified in that Energy Northwest failed to provide adequate test procedures resulting in subsequent inoperability of DG3.

Enforcement: Technical Specification 5.4.1.a requires, in part, that written procedures shall be established and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, Appendix A, Section 4.w, requires procedures for startup, operation and shutdown of

emergency diesel generators. Contrary to this requirement, since February 23, 2006, Procedure OSP-ELEC-0C703 was inadequate; and since July 6, 1999, Procedure TSP-DG-E501 was inadequate. Because this finding was of very low safety significance and was entered into the corrective action program as PER 207-0411, this violation is being treated as an NCV with two examples, consistent with Section VI.A.1 of the Enforcement Policy (NCV 05000397/2007005-03; Failure to Provide Adequate Procedures for Shutdown of the HPCS Spray Diesel Generator). Energy Northwest implemented immediate corrective action to restore DG3 to an operable condition, suspended use of, and planned to revise the affected procedures.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the below listed post-maintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions, (2) evaluated the safety functions that may have been affected by the maintenance activity, and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also reviewed the corrective action program to determine if the licensee identified and corrected problems related to post-maintenance testing.

- WO 01134737, "Detailed Inspection of Circuit Breaker E-CB-7/DG1," dated October 5, 2007
- WO 01144220, "Diesel Generator No. 2 Turbocharger Replacement," dated October 26, 2007
- WO 01143307, "Cleaning and Inspection of SW-TCV-11A," dated November 14, 2007
- WO 01145343, "DO-LS-10B Setpoint Change," dated November 15, 2007

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and Technical Specifications to ensure that the below listed surveillance activities demonstrated that the SSC's tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated Technical Specification operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested SSC's not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

WO 01137471, "TSP-DG2-B502; Standby Diesel Generator DG2 Load Testing," dated October 18, 2007

WO 01138038, "OSP-LPCS/IST-Q702; LPCS System Operability Test," dated November 13, 2007

WO 01146604, "PPM 15.1.29; Fire Truck Operability Test," dated December 16, 2007

The inspectors completed three samples including: Two routine surveillance tests and one inservice test.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, plant drawings, procedure requirements, and Technical Specifications to ensure that the temporary modification listed below was properly implemented. The inspectors: (1) verified that the modification did not have an affect on system operability/availability; (2) verified that the installation was consistent with the modification documents; (3) ensured that the post-installation test results were satisfactory and that the impact of the temporary modification on permanently installed SSC's were supported by the test; (4) verified that the modifications were identified on control room drawings and that appropriate identification tags were placed on the affected drawings; and (5) verified that appropriate

safety evaluations were completed. The inspectors verified that licensee identified and implemented any needed corrective actions associated with temporary modifications.

- Temporary Modification Request TMR 07-019, "Steam leakage internal to the level switch has caused HD-LS-6BIT to fail 'open'," dated December 6, 2007

The inspectors completed one sample.

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 licensee staff the status of offsite siren and tone alert radio systems to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E, and observed the licensee's annual full-cycle siren test. The licensee'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 the licensee's current FEMA-approved alert and notification system design reports, "Description of the Early Warning System for the Washington Public Power Supply System Nuclear Plants 1, 2, and 4," December 1981, and "WNP-2 Site-Specific Offsite Radiological Emergency Preparedness Alert and Notification System Quality Assurance Verification Report," May 1994. The inspector also reviewed Telecommunications Services Instruction TSI 6.2.32, "Bi-Weekly Emergency Response River Siren Polling Test," Revision 9, and Telecommunications Services Instruction TSI 6.2.22, "Annual E/R Siren System Activation Test," Revision 10.

The inspector completed one sample during the inspection

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector discussed with licensee staff the status of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities. The inspector reviewed

Procedure EPIP 13.4.1, "Emergency Notifications," Revision 30, and the references listed in the Attachment to this report related to the emergency response organization augmentation system to evaluate the licensee's ability to staff the emergency response facilities in accordance with the licensee emergency plan and the requirements of 10 CFR Part 50, Appendix E.

The inspector completed one sample during the inspection.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector performed an in-office review of Revision 48 to the Columbia Generating Station Emergency Plan submitted September 14, 2007. This revision relocated the Benton County Emergency Worker and Assistance Center because of the long term unavailability of the current location, updated company names and titles to reflect ongoing changes, transferred responsibility for facility security for the joint information center from the licensee security force to local law enforcement agencies, and made other minor administrative changes.

This revision was compared to the previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to Emergency Planning Instruction EPI-16, "Emergency Plan Change Processing," Revision 7, and to the emergency planning standards of 10 CFR 50.47(b), to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did not constitute approval of licensee changes, therefore, these revisions are subject to future inspection.

The inspector completed one sample during the 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 licensee's corrective action program requirements in Procedures SWP-CAP-1, "Corrective Action Program," Revision 12, and SWP-CAP-2, "Cause Determination," Revision 5. The inspector reviewed summaries of 272 condition reports assigned to the emergency preparedness department between December 2005 and September 2007, and selected 18 for detailed review against the program

requirements. The inspector evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements and 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E. The inspector also reviewed other documents as listed in the attachment to this report.

The inspector completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On October 23, 2007, the inspectors observed an emergency response organization drill which contributed to the drill/exercise performance and emergency response organization performance indicators. The inspectors observed: (1) the training evolution to identify any weaknesses and deficiencies in classification, notification, and protective action requirements development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the NEI 99-02 document's acceptance criteria.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control To Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector used the requirements in 10 CFR Part 20, the Technical Specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Controls (surveys, posting, and barricades) of radiation, high radiation, or airborne radioactivity areas
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Barrier integrity and performance of engineering controls in airborne radioactivity areas
- Corrective action documents related to access controls
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following items:

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent

The inspector completed 8 of the required 21 samples.

b. Findings

- .1 Introduction: The inspector reviewed a self-revealing, NCV of 10 CFR 20.1501(a) resulting from the licensee's failure to perform airborne radioactivity surveys during a work activity. The finding had very low safety significance.

Description: On May 30, 2007, five contract scaffold workers were contaminated while working in the reactor water cleanup heat exchanger room. The workers alarmed the personnel contamination monitors as they exited the radiologically controlled area and radiation protection personnel responded. The workers were decontaminated and given whole body counts. The workers were found to have internal deposition of radionuclides and dose assessments under 25 millirems.

The licensee performed an apparent cause evaluation and concluded the cause of the most recent event was the lack of a set of specific contamination control rules to apply when entering an area with high levels of contamination. The apparent cause evaluation also determined the event was similar to another contamination event in 2005, and found that a corrective action from the previous event were "ineffective in precluding this event because the process put into place in Action 7 was not specific enough." This action was supposed to design and implement a process for adding more detailed contamination controls to radiation work permits for medium and high risk contamination work.

In reviewing the most recent occurrence, the licensee determined radiation protection personnel had not taken an air sample to evaluate the airborne radioactivity levels during the work activity. This was because the governing radiation work permit did not

require an air sampling. The licensee attributed this to the lack of detailed contamination controls as discussed above.

Analysis: The failure to survey airborne radioactivity was a performance deficiency; as a result, five contract scaffold workers were contaminated. This finding was greater than minor because it was associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective in that the lack of knowledge of radiological conditions could increase personnel dose. Since this occurrence involves workers unplanned, unintended dose or potential of such a dose which could have been significantly greater as a result of a single minor, reasonable alteration of circumstances, this finding was evaluated with the Occupational Radiation Safety Significance Determination Process. The inspector determined that the finding was of very low safety significance because it did not involve: (1) an as low as reasonably achievable (ALARA) finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Additionally, this finding had a crosscutting aspect in the problem identification and resolution area associated with the corrective action program component because the licensee did not take appropriate corrective actions to address safety issues in a timely manner [P1.d].

This finding was self-revealing because the licensee was alerted to the problem by the alarming personnel contamination monitors. Therefore, problem identification required no active and deliberate observation by the licensee.

Enforcement: 10 CFR 20.1501(a) of Title 10 of the Code of Federal Regulations requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, a "survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. In part, 10 CFR 20.1201(a) states that the licensee shall control the occupational dose to individual adults. Contrary to this requirement, the licensee violated 10 CFR 20.1501(a) when it failed to perform an evaluation of airborne radioactivity to ensure compliance with 10 CFR 20.1201(a). Because this failure to perform a radiological survey was of very low safety significance and has been entered into the licensee's corrective action program as PER 207-00226, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000397/2007005-04, "Failure to Perform Airborne Radiation Survey."

- .2 Introduction: The inspector reviewed a self-revealing, NCV Technical Specification 5.4.1 because a worker failed to use the correct radiation work permit and obtain a briefing of the dose rates in the work area. The finding had very low safety significance.

Description: On June 9, 2007, a contract worker entered the steam tunnel and received a dose rate alarm. The worker's dosimeter was set to alarm at 100 millirems per hour.

During the review of the occurrence, the licensee determined the worker had entered an area with a dose rate of 203 millirems per hour. The licensee also found the worker used a radiation work permit intended for work in the drywell instead of the steam tunnel. Both radiation work permits allowed work in high radiation areas and contained similar safety instructions. However, both radiation work permits contained dose rates specific to a particular area and required a prejob briefing by health physics (HP) personnel describing the dose rates in the work area in more detail and precautions to minimize exposure. The worker failed to contact HPs personnel before entry into the steam tunnel to obtain a briefing and change to the appropriate radiation work permit.

Analysis: The failure to read and follow radiation work permit instructions and obtain a briefing was a performance deficiency. This finding was greater than minor because it was associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective in that the lack of knowledge of radiological conditions could increase personnel dose. Since this occurrence involves workers unplanned, unintended dose or potential of such a dose which could have been significantly greater as a result of a single minor, reasonable alteration of circumstances, this finding was evaluated with the Occupational Radiation Safety Significance Determination Process. The inspector determined that the finding was of very low safety significance because it did not involve: (1) an ALARA finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Additionally, this finding had a crosscutting aspect in the human performance area, associated with the work practices component, because the worker did not use human error prevention techniques such as self-checking [H4.A].

This finding was self-revealing because the licensee was alerted to the problem by the worker's alarming electronic dosimeter. Therefore, problem identification required no active and deliberate observation by the licensee.

Enforcement: Technical Specification 5.4.1 requires written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory 1.33, Revision 2, Appendix A, February 1978. Section 7(e)(1) of Appendix A lists procedures for access control to radiation areas, including a radiation work permit system. Procedure RPP 04, "Entry into, Conduct In, and Exit from Radiologically Controlled Areas," Revision 14, implements this requirement and states "Read applicable RWPs and review radiological conditions for the area or job." Radiation Work Permit 3001755, "R18 Steam Tunnel Miscellaneous Work **HR**" states, "This is a high radiation area RWP. A HP prejob briefing is required prior to working on this RWP." Contrary to this above, the licensee violated this requirement when the contract worker failed to read the applicable radiation work permit before entering the steam tunnel and obtain a prejob briefing of the dose rates. Because this failure to use the correct radiation work permit and obtain a briefing of dose rates was of very low safety significance and has been entered into the licensee's corrective action program as Condition Report 2-07-05815, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000397/2007005-05, "Failure to Use the Correct Radiation Work Permit and obtain a briefing of dose rates."

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Five work activities from previous work history data which resulted in the highest personnel collective exposures
- Site-specific trends in collective exposures, plant historical data, and source-term measurements
- Site-specific ALARA procedures
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Dose rate reduction activities in work planning
- Postjob (work activity) reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Method for adjusting exposure estimates, or replanning work, when unexpected changes in scope or emergent work were encountered
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Source-term control strategy or justifications for not pursuing such exposure reduction initiatives
- Specific sources identified by the licensee for exposure reduction actions, priorities established for these actions, and results achieved since the last refueling cycle
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking

The inspector completed 9 of the required 15 samples and 5 of the optional samples.

b. Findings

Introduction: The inspector reviewed a self-revealing ALARA finding because performance deficiencies resulted in the collective dose of a work activity exceeding five person-rem and exceeding the legitimate dose estimate by more than 50 percent. The finding had very low safety significance.

Description: Radiation Work Permit 30001874, "R18 RX RRC/RWCU Chemical Decontamination **HHR**," accrued 9.143 person-rem and exceeded the dose estimate, 5.783 person-rem, by approximately 58 percent. According to the licensee's post job review, the primary reason for exceeding the estimated dose was the need to perform work activities more than once. Human performance errors by craft workers led to contamination issues and resulted in extra dose accumulated through the need to repeat work activities. Lack of adequate planning resulted in the need to move or rebuild scaffolding which was an impediment to the routing of hoses used during the decontamination. Pipe fitters exceeded their dose budget, in part, because of the need to rework leaking connections. Conversely, the operations portion of the dose estimate was significantly overestimated. The operators' estimate was 675 millirem; however, they only accrued 75 millirem. The licensee documented this finding in the corrective action program. Corrective action is being evaluated.

According to NUREG 0713, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities," Volume 27, the licensee's 3-year rolling average collective dose for 2004 through 2006 is approximately 199 person-rem.

Analysis: Poor work practices resulting in the need to repeat maintenance activities in radiological areas are performance deficiencies which resulted in licensee exceeding the legitimate dose estimate by 50 percent. This finding is greater than minor because it is associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective, in that it caused increased collective radiation dose. Using the Occupational Radiation Safety significance determination process, the inspector determined this finding had very low safety significance. Although the finding involved ALARA planning and work controls, the licensee's latest, official 3-year rolling average collective dose was less than 240 person-rem. Additionally, this finding had a crosscutting aspect in the human performance area, associated with the work control component, because work activities were not planned taking into account job site conditions [H3.a].

This finding was self-revealing because the higher collective dose totals associated with the work activity became self-evident and required no active and deliberate observation by the licensee.

Enforcement: No violation of regulatory requirements occurred. However, the licensee was in the process of developing screening and supplemental training programs for selected contract maintenance workers. This finding is documented in the licensee's corrective action program by Condition Report 2-07-09678: FIN 05000397/2007005-06, ALARA Finding.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

Cornerstone: Mitigating Systems

The inspectors sampled licensee submittals for the mitigating system performance indicators listed below for the period from the first quarter 2006 through the fourth quarter 2007. To verify the accuracy of the data reported during that period, definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, were used to verify the basis in reporting for each data element. The inspectors reviewed the data the licensee used to generate the basis document unavailability and unreliability values. The licensee entered the values into a spreadsheet which was used to perform various calculations. The inspectors also used the following licensee source documents to verify the validity of the input data, control room logs, surveillance test procedures, and maintenance procedures. The inspectors looked at the mitigating system performance indicators for the following systems:

- Cooling Water Systems

The inspectors completed one sample.

Cornerstone: Emergency Preparedness

The inspector reviewed licensee evaluations for the three Emergency Preparedness Cornerstone performance indicators of Drill and Exercise Performance, Emergency Response Organization Participation, and Alert and Notification System Reliability, for the period July 2006 through September 2007. The definitions and guidance of Nuclear Energy Institute Report 99-02, "Regulatory Assessment Indicator Guideline," Revisions 3 and 4, and the licensee performance indicator procedure Emergency Planning Instruction EPI-18, "Emergency Preparedness NRC Performance Indicators," Revisions 10 and 11, were used to verify the accuracy of the licensee's evaluations for each performance indicator reported during the assessment period.

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 16 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 reviewed other documents as listed in the attachment to this report.

The inspector completed three samples during the inspection.

Cornerstone: Occupational Radiation Safety

Occupational Exposure Control Effectiveness

The inspector reviewed licensee documents from April 1 through September 30, 2007. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's Technical Specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 5). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (one) in this cornerstone.

Cornerstone: Public Radiation Safety

Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

The inspector reviewed licensee documents from April 1 through September 30, 2007. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (one) in this cornerstone.

b. Findings

No findings of significance were identified.

40A2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program:

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed screening of all items entered into the licensee's corrective action program. This was accomplished by reviewing the description of each new corrective action document and periodically attending daily management meetings.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment and corrective maintenance issues but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1. The review also included issues documented outside the normal corrective action program in system health reports, corrective maintenance work orders, component status reports, and maintenance rule assessments. The inspectors' review nominally considered the 6-month period of July through December 2007, although some examples expanded beyond those dates when the scope of the trend warranted. Corrective actions associated with identified trends were reviewed for adequacy.

The inspectors completed one sample.

b. Findings

No significant findings or observations were identified. During the review the inspectors noted that Energy Northwest identified one potential adverse trend which was documented in the corrective action program:

- PER 207-0459 documented a potential adverse trend identifying a number of unrelated failures of the DGs that may have a thread linking some common issues. Several problem evaluation requests have been documented associated with DG reliability and failures which resulted in increased challenges to control room staff.

The inspectors did not identify any other adverse trends.

.3 Annual Sample Review - Emergency Preparedness

a. Inspection Scope

The inspector selected 18 condition reports and performance evaluation requests for detailed review. The reports were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspector evaluated the CRs against the requirements of licensee Procedures SWP-CAP-1, "Corrective Action Program," Revision 12, and SWP-CAP-2, "Cause Determination," Revision 5.

b. Findings

No findings of significance were identified.

.4 Annual Sample - Operator Work Around Review

a. Inspection Scope

On December 17, 2007, the inspectors reviewed the operations department burden list, control room deficiencies, and operator work around list to determine if any operator work arounds, either individually or collectively, could unnecessarily challenge mitigating system performance or operators during event response. The inspectors verified that Energy Northwest was identifying and documenting operator work around problems at an appropriate threshold.

The inspectors completed one sample.

b. Findings

No findings of significance were identified..

.5 Cross-References to Problem Identification and Resolution (PI&R) Findings Documented Elsewhere

Section 2OS1 describes a finding with crosscutting aspects associated with PI&R.

.6 Radiation Protection

The inspector evaluated the effectiveness of the licensee's PI&R process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

4OA3 Event Followup (71153)

.1 DG 2 Turbocharger Failure

a. Inspection Scope

On October 18, 2007, during unloading of DG 2 following a 24-hour loaded surveillance test, local operators observed a significant amount of diesel exhaust in the DG 2 room. The operators did not note any abnormal DG operation and evacuated the DG room due to habitability and industrial safety concerns. The operators noted a loud noise from the DG room area as they were exiting. The operators notified the control room of the problem. The fire brigade was subsequently manned and a room re-entry made approximately 10 minutes later. No diesel exhaust was noted in the room at the time of the re-entry and no fire could be identified. The inspectors reviewed the operators implementation of applicable abnormal procedures and the emergency plan to validate Energy Northwest's evaluation of reportability and applicability of emergency action levels and implementation of abnormal procedures. Energy Northwest determined that the source of the diesel exhaust was a failed turbocharger on Engine 1B2 which occurred during unloading of DG-2. This resulted in diesel exhaust being blown backwards through the air intake system resulting in the release of diesel exhaust into the room.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Willful Failure to Complete Fire Watch Rounds and Falsification of Logs

a. Inspection Scope

The NRC conducted an investigation into the details of incomplete fire watch rounds and falsified records for records conducted on April 30 and May 7, 2007. Interviews were conducted with the individual in question, security and fire watch supervisors, guards, and training personnel. Fire watch records were compared with security access records. Training records for fire watches were also reviewed. The results of the licensee's investigation, extent of condition review, and corrective actions were reviewed in-office between September 13 through November 26, 2007.

b. Findings

Introduction: A Severity Level IV violation was identified because a security officer at Columbia Generating Station willfully failed to enter some plant areas required to complete portions of 2 hourly fire watch rounds on both April 30 and May 7, 2007. The NRC concluded that the officer willfully failed to complete the required fire tours and then falsified the fire tour log by indicating he had completed them. In accordance with the NRC Enforcement Policy, the violation is being treated as an NCV violation because the licensee promptly identified this violation during a routine audit and took appropriate corrective action.

Description: On May 25, 2007, the licensee reported to the NRC that a routine audit of fire watch rounds identified discrepancies with rounds for one security guard. Key card door entries were compared with the fire watch log, revealing that the officer had not entered two areas of the radwaste building during the second and third rounds on May 7, 2007, after entering all required areas on first round. The fire watch log sheet had been initialed to indicate that the areas had been inspected. The security officer was interviewed by the security supervisor about the discrepancy; and the officer first denied missing any areas, then claimed he had asked two other officers to tour the vital areas in question. Interviews with those two officers indicated that he had not approached either of them for help. The licensee notified the NRC Senior Resident Inspector, conducted an investigation, and performed a larger sample of fire watch tours. The officer was placed on administrative leave on May 24, 2007, and subsequently terminated on June 1, 2007, for falsification of documentation.

The individual had completed fire watch training on April 23, 2007. The licensee's extent of condition review identified that the officer had similar discrepancies during both of the first two assigned fire watches.

Based on the Office of Investigation Report 4-2007-038 and inspection activities, the NRC concluded that the individual willfully failed to complete portions of required compensatory fire tours, then falsified the fire tour log, an NRC-required record, to indicate the tours had been completed.

The inspectors identified that some aspects of the fire watch training process may not have been rigorous. For example, fire watch qualification requirements did not include a demonstration that each individual knew the inspection route. Instead, individuals in the class in question were qualified based on completing training and their apparent comfort level with the task. During an interview with the OI investigator, the individual indicated that he was not completely confident in his ability to complete fire watches. The individual also gave conflicting statements of his understanding of the procedure requirements. The licensee's investigation determined that others in the individual's class had recognized that the individual needed help in completing the training.

The inspectors noted that the individual believed it was acceptable to perform the entire fire watch tour and then initial all the fire area blocks. While this was not in accordance with the procedure, the licensee's investigation determined that other qualified fire watch personnel had the same understanding, so the report recommended correcting this inappropriate understanding.

The security officer performing these fire watches was also responsible for certain required security checks. The inspectors verified that all required security checks assigned to this individual were correctly performed as required.

The licensee took the following actions in response to this issue:

- The individual was interviewed, placed on administrative leave, and employment was later terminated.
- Fire watch and security logs were checked against key card computer records to determine whether other discrepancies existed with the individual's performance. This identified the April 30, 2007, problems.
- An extent of condition review was performed for other security workers performing fire watches with no discrepancies noted.
- The licensee performed an investigation to determine the causes. This effort included an anonymous survey of security personnel to assess whether other examples of improperly performed duties or falsification of records existed. The report made recommendations for additional corrective actions.

Significance: Absent the willful aspect, failure to complete two consecutive fire watchtours on two different dates was of very low safety significance. Proper fire watch tours were completed in the missed areas before and after the 2 hour periods where they were not inspected. The licensee's extent of condition review identified no additional examples of other newly trained individuals with fire watch discrepancies. This problem was identified during the first regular audit opportunity and promptly corrected.

Enforcement: 10 CFR 50.9 requires, in part, that information required by regulation or license condition to be maintained by the licensee shall be complete and accurate in all material respects.

Columbia Generating Station License Condition 2.C(14), "Fire Protection Program (Generic Letter 86-10)," states:

"The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in Section 9.5.1 and Appendix F of the Final Safety Analysis Report (FSAR) for the facility thru Amendment 39 and as described in subsequent letters to the staff through November 30, 1988, referenced in the May 22, 1989, safety evaluation and in other pertinent sections of the FSAR referenced in either Section 9.5.1 or Appendix F and as approved in the Safety Evaluation Report issued in March 1982 (NUREG 0892) and in Supplements 3, issued in May 1983, and 4, issued in December 1983, and in safety evaluations issued with letters dated November 11, 1987, and May 22, 1989, subject to the following provision:

"The license may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire."

The Columbia Generating Station Final Safety Analysis Report, Appendix F, "Fire Protection Evaluation," Section F.7.8, describes Procedure SWP-FPP-01, "Nuclear Fire Protection Program," as a fire protection program procedure that implements the nuclear fire protection program elements.

SWP-FPP-01, "Nuclear Fire Protection Program," Revision 5, Section 3.3.1.b, requires that compensatory measures for impaired fire protection features be handled using Fire Protection Procedure FPP 1.7.

Fire Protection Procedure FPP 1.7, "Fire Tour Implementation," Revision 3, Steps 3.3.7 and 3.3.8, require that each impaired component or area listed on the fire tour log be visually inspected during the specified interval and the log shall be initialed. At the end of the round, a signature is entered.

Contrary to the above, on both April 30, 2007, and May 7, 2007, during two consecutive hourly fire tour rounds, a security officer assigned failed to conduct portions of the fire tour inspections and inaccurately indicated on the the fire tour log that the fire watches had been conducted. This is a violation of the facility's License Condition 2.C(14) and 10 CFR 50.9 (EA-07-282).

The NRC also concluded that willfulness was associated with this violation. Willful violations are a particular concern to the Commission because its regulatory program is based on licensees and their employees acting with integrity. Therefore, a violation may be considered more significant than the underlying noncompliance if it involves willfulness. However, in an effort to encourage licensees to act responsibly in the identification and correction of such violations, the NRC may choose to disposition certain violations by issuing an NCV if the licensee identified and corrected the violation. Therefore, in accordance with the NRC Enforcement Policy, this violation is being treated as a Severity Level IV NCV because the licensee promptly identified and reported this violation and took appropriate corrective action (NCV 05000397/2007005-07, Willful Failure to Complete Fire Watch Rounds and Falsification of Logs). This issue was entered into the corrective action program under Condition Report 2-07-05033.

40A6 Meetings, Including Exit

Exit Meeting Summary

On October 4, 2007, the inspector presented the occupational radiation safety inspection results to Mr. T. Lynch, Plant General Manager, and other members of his staff who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On October 4, 2007, the inspector presented the emergency preparedness inspection results to Mr. T. Lynch, Plant General Manager, and other members of his staff, who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On November 1, 2007, the inspectors presented the results of the Biennial Heat Sink Performance inspection to Mr. D. Coleman, Manager Regularity Programs, and other members of his staff. The licensee acknowledged the findings presented in the exit meeting. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 16, 2007, the inspector presented the maintenance effectiveness inspection results to Mr. S. Ghambir, Vice President, Technical Services, and other members of licensee management at the conclusion of the onsite inspection.

On November 26, 2007, the inspectors presented the results of the inspection of issues related to fire watch completion to Mr. D. Gregoire, who acknowledged the findings. The inspectors confirmed that proprietary information was returned during the inspection.

On January 4, 2008, the inspector discussed the licensed operator annual requalification examination results with Mr. Jerrow, Training Manager. The licensee acknowledged the findings and confirmed that proprietary information was not provided during the inspection.

On January 10, 2008, the resident inspectors presented the inspection results to Mr. Gambhir and other members of his staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 17, 2008, a telephonic exit with Mr. G. Cullen, Licensing Supervisor, was conducted to present the final characterization of a maintenance effectiveness issue as an unresolved item. The inspector verified that no proprietary information was reviewed during the inspection.

40A7 Licensee Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as an NCV.

- 10 CFR 50.54(q) requires that a licensee follow an emergency plan that meets the standards of 10 CFR 50.47(b) and requirements of 10 CFR Part 50, Appendix E. The Columbia Generating Station Emergency Plan, §5.4.5 and

§6.2.8, describes radio analytical instruments located at the licensee's onsite emergency operations facility for the analysis of samples collected by environmental monitoring teams. Contrary to this, required radio analytical instruments were removed from the emergency operations facility prior to July 2007. This issue was identified in the licensee's corrective action program as Condition Report 02-06-05048 and Plant Evaluation Request 206-0370. This finding is of very low safety significance because it is a failure to comply with NRC requirement 50.54(q), is associated with planning standard 50.47(b)(8), is not associated with a risk-significant planning standard as defined in NRC Manual Chapter 0609, Appendix B, §2.0, and is not a functional failure of the planning standard because the emergency operations facility remains available to perform its emergency function, and the licensee has maintained near-site radio analytical capabilities.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Energy Northwest

B. Adami, Technical Services Manager
D. Atkinson, Vice President, Nuclear Generation
L. Cortopassi, Manager, Operations
D. Dinger, Supervisor, Radiological Planning
G. Cullen, Manager, Manager, Regulatory Programs
K. Engbarth, Supervisor, Corrective Action Program
J. Fisher, Supervisor, Security
J. Frisco, General Manager, Engineering
S. Gambhir, Vice President, Technical Services
D. Gregoire, Acting Supervisor, Licensing
M. Holle, Service Water System Engineer
T. Huiatt, Licensing Engineer
M. Humphries, Supervisor, Reactor Engineering
P. Inserra, Acting Vice President, Organizational Performance and Staffing
S. Jerrow, Manager, Operations Training
C. King, Manager, Chemistry
W. LaFramboise, System Engineering Manager
M. Laudisio, Supervisor, Radiological Operations
T. Lynch, Plant General Manager
S. Mazurkiewicz, Senior Licensing Engineer
C. Moon, Manager, Training
M. Morris, Maintenance Rule Coordinator
M. Murphy, Maintenance Rule Coordinator Backup
J. Parrish, Chief Executive Officer
M. Reis, Acting Manager, Emergency Planning
F. Schill, Licensing
M. Shymanski, Manager, Radiation Protection
B. Smallbridge, Manager, Construction and Maintenance Services
R. Torres, Manager, Quality
C. Whitcomb, Vice President, Organizational Performance and Staffing
R. Wolfgramm, NSSS System Engineer

NRC Personnel

R. Cohen, Resident Inspector
Z. Dunham, Senior Resident Inspector
W. Fitzgibbon, Investigator, Region IV Office of Investigations
J. Larsen, Senior Security Inspector

Other

M. Hammond, Chairman, Regional Assistance Committee, Federal Emergency Management Agency, Region X

ITEMS OPENED AND CLOSED

Items Opened, Closed, and Discussed

Opened

05000397/2007005-02	URI	Failure to perform adequate structural monitoring of submerged structures (Section 1R12.2)
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Opened and Closed

05000397/2007005-01	NCV	Failure to Conduct Engineering Evaluation in Accordance with Scaffold Procedure (Section 1R04)
05000397/2007005-03	NCV	Failure to Provide Adequate Procedures for Shutdown of the High Pressure Core Spray DG (Section 1R15)
05000397/2007005-04	NCV	Failure to Survey Airborne Radioactivity (Section 2OS1)
05000397/2007005-05	NCV	Failure to Use the Correct Radiation Work Permit and Obtain a Briefing of Dose Rates (Section 2OS1)
05000397/2007005-06	FIN	ALARA Finding (Section 2OS2)
05000397/2007005-07	NCV	Willful Failure to Complete Fire Watch Rounds and Falsification of Logs (Section 4OA5.1)

Closed

None.

Discussed

None.

PARTIAL LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

SOP-CST-OPS, "Condensate Storage Tank Operation," Revision 0

ISP-CONT-X301, "Accident Monitoring Instrumentation CST - Level - Monitoring - CC," Revision 2

SOP-COLDWEATHER-OPS, "COLD WEATHER OPERATIONS," Revision 7

Drawings and Diagrams

M27-1, "Flow Diagram Condensate Supply System Reactor Buildings, Radwaste/Reactor Building Corridor, & Yard," Revision 98

M507-1, "Flow Diagram Circulating Water System Turbine Generator Buildings and Yard," Revision 140

Work Order

WO 01069549

Corrective Action Documents

CR 2-05-00233

CR 2-06-07431

CR 2-07-09526

CR 2-05-00254

CR 2-06-08942

CR 2-07-09591

CR 2-05-00370

CR 2-07-00029

CR 2-07-09685

CR 2-05-07894

CR 2-07-09183

CR 2-07-10343

CR 2-06-03484

CR 2-07-09506

CR 2-07-10463

Miscellaneous

CER C92-0181, "COND-LT-40A," Revision 0

Condition Health Report, "Condensate," July through September 2007

GO2-92-057, "CGS Exit Meeting Commitments to NRC," dated March 6, 1992

FSAR Table 7.5-1

AR 266717

Section 1R04: Equipment Alignment

Procedures

PPM 2.10.3, "Control Cable and Critical Switchgear Rooms HVAC," Revision 45

ABN HVAC, "HVAC Trouble," Revision 6

PPM 10.2.53, "Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks," Revision 26

Drawings and Diagrams

M775, "Emergency Chilled Water Piping System," Revision 25

M556, "Flow Diagram Containment Instrument Air," Revision 49

Work Order

WO 01130428

Miscellaneous

CER C94-0286, Revision 0

Section 1R05: Fire Protection

Corrective Action Documents

CR 2-07-08884

CR 2-07-08893

CR 2-07-08945

Miscellaneous

Columbia Generating Station Pre-Fire Plans, Revision 3

Columbia Generating Station Final Safety Analysis Report, Appendix F, Amendment 57

Section 1R06: Flood Protection

Miscellaneous

PPM 2.11.5, "Floor Drain System," Revision 32

ME 02-02-02, "Calculation for Reactor Building Flooding Analysis," Revision 1

Section 1R07: Biennial Heat Sink Performance Inspection

Calculations

ME-02-01-30, "Determination of RCIC Availability without Standby Service Water," Revision 0

ME-02-92-43, "Room Temperature Calculation for DG Building, Reactor Building, Radwaste Building and Service water Pumphouse Under Design Basis Accident Conditions," Revision 7

Condition Reports

2-04-06546

2-06-00108

2-06-08895

2-07-09643

2-05-02496

2-06-02945

2-07-00501

2-07-09645

2-05-03093

2-06-02995

2-07-00573

2-07-09646

2-05-06111

2-06-07003

2-07-00976

201-180495

2-05-06931

2-06-07746

2-07-05730

2-05-06931

Action Request

AR 16328 01

Engineering Change

ME-02-01030

Hx Testing Work Orders

01109770 01 01130853 01 01131213 01
01130853 01

Cleaning Work Orders

01037260 01064758 01107070
01058827 01070388 01110540

Work Orders

01046929 01 01099111 01

Procedures

TM-2111, "Thermal Performance Testing of air to Water Hxs in the WNP-2-SW System,"
Revision 0

TSP-SW-A101, "Service Water Loop A cooling Coil Heat Load Capacity Test," Revision 0

Number 8.4.42, "Thermal Performance Monitoring of RHR -1A and RHR-1B," Revision 6

TSP-SW-A102, "Service Water Loop A Cooling Coil Heat Load Capacity Test," Revision 0

Reports

Control Room Operators Log, dated October 2, 2006, through August 23, 2007

Linear Polarization Resistance Monitoring (Corrosion Monitoring Method)

SA-2007-0038, "Self Assessment/Benchmark Planning Report," dated August 24, 2007

PER 207-0345, "Potential Common Cause Vulnerabilities in Essential Service Water Systems
Due to Inadequate Chemistry," dated September 26, 2007

PER 201-1744, "RCIC NRC Performance Data may Include too many Unavailable Hours
because of Loss of Service Water," dated August 14, 2001

NSSS Service Water Reliability Program, Appendix 2, dated January 26, 2005

System Health Report Columbia Generating Station, RHR, dated April through June 2007

TM-2111, "Thermal Performance Testing Of Air-to-Water Heat Exchangers in the SW System in Accordance with the Recommendations of USNRC Generic Letter 89-13," Revision 0

Section 1R12: Maintenance Effectiveness

Work Request

WR 29064091

Section 1R12: Triennial Maintenance Rule Inspection

Condition Reports

2-05-01789	2-05-06990	2-06-04487	2-07-04672
2-05-02011	2-05-07097	2-06-04724	2-07-04689
2-05-02186	2-05-07475	2-06-04838	2-07-04699
2-05-02710	2-05-07590	2-06-05301	2-07-04747
2-05-03583	2-05-08124	2-06-05873	2-07-04823
2-05-03610	2-05-08426	2-06-06062	2-07-04825
2-05-03626	2-05-08604	2-06-06262	2-07-04886
2-05-03818	2-05-08622	2-06-06651	2-07-05862
2-05-03927	2-05-09380	2-06-07072	2-07-06048
2-05-04128	2-05-09582	2-06-07217	2-07-06059
2-05-04221	2-05-09621	2-06-07354	2-07-06067
2-05-04450	2-05-09753	2-06-07506	2-07-06163
2-05-04757	2-05-09858	2-06-07594	2-07-06188
2-05-04806	2-05-09895	2-06-07939	2-07-06350
2-05-05139	2-05-10077	2-06-08060	2-07-06352
2-05-05182	2-06-01857	2-06-08065	2-07-06538
2-05-05193	2-06-01993	2-06-08179	2-07-06620
2-05-05345	2-06-02154	2-06-08285	2-07-06627
2-05-05354	2-06-02251	2-06-08355	2-07-06653
2-05-05430	2-06-02261	2-06-08476	2-07-06695
2-05-05544	2-06-02529	2-06-08945	2-07-06824
2-05-05565	2-06-03019	2-07-02001	2-07-07228
2-05-05771	2-06-03037	2-07-02130	2-07-07549
2-05-06080	2-06-03146	2-07-02550	2-07-07590
2-05-06154	2-06-04339	2-07-02616	2-07-07628
2-05-06646	2-06-04367	2-07-02659	2-07-08006
2-05-06804	2-06-04426	2-07-03149	
2-05-06806	2-06-04460	2-07-04450	

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PPM 1.3.76, "Integrated Risk Management," Revision 11

PPM 1.5.11, "Maintenance Rule Program," Revision 6

PPM 1.5.14, "Risk Assessment and Management for Maintenance/Surveillance Activities,"
Revision 16

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TI 4.23, "Maintenance Rule Structural Baseline Inspections," Revision 1

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

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

SOP-DG4-SHUTDOWN, "Diesel Generator 4 Shutdown," Revision 1

SOP-DG4-START, "Diesel Generator 4 Start," Revision 2

PPM 1.3.76, "Integrated Risk Management," Revision 11

ABN-ELEC-DG3-CROSSTIE/SM7, "DG3 Crosstie to SM-7," Revision 1

ABN-ELEC-DG4-CROSSTIE/MC-7A, "DG4 Crosstie to MC-7A," Revision 1

Work Orders

WO 01115163

WO 01128275

WO 01128838

Corrective Action Documents

CR 2-05-09553

CR 2-07-08811

CR 2-07-09098

Problem Evaluation Report

PER 207-0368

Miscellaneous

Energy Northwest Impact Statement for WO 01115163 dated June 4, 2007

Section 1R15: Operability Evaluations

Procedures

OSP-ELEC-M703, "HPCS Diesel Generator Monthly Operability Test," Revision 32

OSP-ELEC-C703, "HPCS Diesel Generator AC Source Operability Check," Revision 8

SWP-CAP-01, "Corrective Action Program," Revision 13

TSP-DG-E501, "Simultaneous Start of All Three Diesel Generators," Revision 2

Drawings and Diagrams

DWG 807E183TC, "Elementary Diagram HPCS Power Supply," Revision 19

DWG 7E001, "HPCS Diesel Gen 4.16KV Brkr E-CP-4/DG3," Revision 17

DWG 7E022, "High Pressure Core Spray system HPCS-P-1," Revision 17

Work Orders

WO 01099386

WO 01145160

Corrective Action Documents

CR 2-05-04743

CR 2-07-10460

CR 2-07-10461

CR 2-07-10462

Problem Evaluation Reports

PER 205-0399

PER 207-0411

Section 1R19: Post Maintenance Testing

Procedures

SOP-DG1-STBY; Emergency Diesel Generator (DIV 1) Standby Lineup; Revision 7

ESP-SW/IST-Q701; SW-TCV-11A Operability; Revision 2

Work Orders

WO 01143307

WO 01136376

WO 01134737

WO 01144220

WO 01145343

Corrective Action Documents

CR 2-07-08835

CR 2-07-09031

CR 2-07-09513

Problem Evaluation Report

PER 207-0387

Section 1R22: Surveillance Testing

Procedures

TSP-DG2-B502, "Standby Diesel Generator DG2 Load Test," Revision 6

OSP-LPCS/IST-Q702, "LPCS System Operability Test," Revision 22

PPM 15.1.29, "Fire Truck Operability Test," Revision 0

Work Orders

WO 01138038

WO 01146604

Section 1EP3: Emergency Response Organization Augmentation Testing

EPIP 13.10.1, "Shift Manager Duties," Revision 30

EPIP 13.14.4, "Emergency Equipment Maintenance and Testing," Revision 42

WO 01109915, "Perform Autodialer and Pager Notification Test," dated November 28, 2005

WO 01115036, "Perform Autodialer and Pager Notification Test," dated February 21, 2006

WO 01122680, "Perform Autodialer and Pager Notification Test," dated August 7, 2006

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WO 01129993, "Perform Autodialer and Pager Notification Test," dated January 31, 2007

WO 01132844, "Perform Autodialer and Pager Notification Test," dated April 9, 2007

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WO 01134249, "Perform Unannounced Call Out Drill," dated September 26, 2007

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Licensing Basis Impact Evaluations

Emergency Plan, Revision 46

Emergency Plan, Revision 47

Emergency Plan, Revision 48

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

Miscellaneous

EPIP 13.10.2, "TSC Manager Duties," Revision 30

EPIP 13.11.1, "EOF Manager Duties," Revision 39

EPIP 13.14.9, "Emergency Program Maintenance," Revision 27

Emergency Planning Instruction EPI-01, "Emergency Planner Responsibilities," Revision 4

Emergency Planning Instruction EPI-21, "Drill and Exercise Performance," Revision 10

Audits

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Audit Report AU-EP-07, "Emergency Preparedness," dated April 4, 2007

Assessments

SA-2006-0017, "Self Assessment/Benchmark Planning Report: Emergency Preparedness Training Material," dated May 31, 2006

SA-2007-0056, "Self Assessment/Benchmark Planning Report: Emergency Plan and Procedure Change Management," dated July 7, 2007

SA-2007-0092, "Self Assessment/Benchmark Planning Report: Benchmarking JIC Security Presence," dated April 26, 2007

SA-2007-0096, "Self Assessment/Benchmark Planning Report: News Release Process Enhancements," dated June 30, 2007

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2-05-09811	2-06-01580	2-07-01449	2-07-05176
2-06-06327	2-06-01755	2-07-02671	2-07-08151
2-06-05048	2-06-01949	2-07-04287	2-07-08159
2-06-03954	2-06-02957	2-07-04869	
2-06-00304	2-07-00344		

Problem Evaluation Request

PER 206-0389

Drill Evaluation Reports

2006 Team C Drill, dated January 10, 2006
2006 Team D Drill, dated March 7, 2006
2006 Team A Drill, dated August 1, 2006
2006 Team A Graded Exercise, dated September 12, 2006
2006 Team B Drill, dated November 13, 2006
2006 Onsite Medical Emergency Drill, dated October 24, 2006
EOF Manager Table Top Drill, dated December 7, 2006

2007 Team D Drill, dated January 9, 2007
2007 Team B Drill, dated March 6, 2007
2007 Team C Drill, dated August 28, 2007
WO 01119676, "2005 Annual Onsite Medical Drill"
WO 01119679, "2006 Annual Fire Drill"
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Miscellaneous Document

Columbia Generating Station Emergency Plan, Revisions 47 and 48

Section 2OS1: Access Controls to Radiologically Significant Areas (71121.01)

Corrective Action Documents

07-4781	07-6293	07-6638	07-7455
07-4876	07-6362	07-6787	07-7466
07-5299	07-6363	07-7230	07-8225
07-5868	07-6582	07-7361	
07-6144			

Procedures

GEN-RPP04, "Entry Into, Conduct In, and Exit From Radiologically Controlled Areas,"
Revision 14

11.2.7.3, "High, High High, and Very High Radiation Area Controls," Revision 26

Section 2OS2: ALARA Planning and Controls (71121.02)

Radiation Work Permits

30001705, "R18 DW MSR/V Maintenance *HRA*"
30001755, "R18 ST Miscellaneous Work **HR**"
30001848, "R18 ST Repair MS-V-28B and MS-V-28C"
30001865, "R18 RF Invesel SFP and Equipment Pit Work ***HR***"
30001874, "R18 RX Building RRC/RWCU Chemical Decontamination"

Procedures

GEN-RPP-01, "ALARA Program Description," Revision 6
GEN-RPP-02, "ALARA Planning and Radiation Work Permits," Revision 14

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Columbia Generating Station's 18th Refueling Outage Final Report

Section 4OA1: Performance Indicator Verification

Procedures

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5

Columbia Generating Station Performance Indicator Report Data; Mitigating System Unavailability, dated November 2007

EPIP 13.1.1, "Classifying the Emergency," Revision 35

EPIP 13.1.1A, "Classifying the Emergency - Basis Document," Revision 18

EPIP 13.2.1, "Protective Actions and Emergency Exposure," Revision 17

EPIP 13.4.1, "Emergency Notifications," Revision 30

EPIP 13.8.1, "Dose Projection System," Revision 26

Interoffice Memorandum, "2006 ERO Training Drill Schedule," dated December 14, 2005

Interoffice Memorandum, "2007 ERO Training Drill Schedule," dated November 2, 2006

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LCO Log Number 11532 LCO Log Number 11544 LCO Log Number 11790

Work Orders

WO 01139069

WO 01137859

WO 01128838

WO 01136354

Section 4OA2: Identification and Resolution of Problems

Corrective Action Documents

CR 2-07-09283

CR 2-07-09890

CR 2-07-00216

CR 2-07-10525

CR 2-07-10172

CR 2-07-08934

CR 2-06-09067

Problem Evaluation Requests

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PER 207-0236

PER 207-0368

PER 206-0674

PER 206-0468

PER 207-0428

PER 207-0352

PER 206-0497

PER 207-0459

PER 207-0416

PER 207-0135

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OI-14, "Columbia Generating Station Operational Challenges Program," Revision 2
Columbia Operational Challenges List, dated December 17, 2007

Section 40A5: Other Activities (Fire Watch Issue)

Condition Report 2-07-05033

ECP Concern 10-2007-01 Final Report, dated October 22, 2007

Columbia Generating Station Final Safety Analysis Report, Appendix F, "Fire Protection Evaluation," Section F.7.8, Amendment 58

Procedure SWP-FPP-01, "Nuclear Fire Protection Program," Revision 5

Procedure FPP-1.7, "Fire Tour Implementation," Revision 3

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