



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064**

October 17, 2002

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

**SUBJECT: COLUMBIA GENERATING STATION - NRC INTEGRATED INSPECTION  
REPORT NO. 50-397/02-03**

Dear Mr. Parrish:

On September 21, 2002, the NRC completed an inspection at your Columbia Generating Station for the period June 23 through September 21, 2002. The enclosed integrated inspection report documents the inspection findings, which were discussed on September 12, June 27, and October 3, 2002, as described in Section 40A6, with Mr. Dale Atkinson and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspectors examined a selection of procedures and representative records, observed activities, and conducted interviews with personnel.

Based on the results of this inspection one green finding was identified which was determined to be a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this finding as a noncited violation, in accordance with Section V1.A.1 of the NRC's Enforcement Policy. If you deny this noncited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region IV; 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 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.gov/reading-rm/ADAMS.html> (the Public Electronic Reading Room).

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

Sincerely,

*/RA/*

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

Docket: 50-397  
License: NPF-21

Enclosure:  
NRC Inspection Report  
50-397/02-03

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-397  
License: NPF-21  
Report: 50-397/02-03  
Licensee: Energy Northwest  
Facility: Columbia Generating Station  
Location: Richland, Washington  
Dates: June 23 through September 21, 2002  
Inspectors: G. D. Replogle, Senior Resident Inspector, Project Branch E, DRP  
M. S. Peck, Resident Inspector, Project Branch E, DRP  
L. M. Willoughby, Resident Inspector, Project Branch C, DRP  
D. R. Carter, Health Physicist, Plant Support Branch, DRS  
W. C. Walker, Senior Project Engineer, Projects Branch C, DRP  
G. B. Miller, Reactor Inspector, Engineering and Maintenance, DRS  
Approved By: W. B. Jones, Chief, Project Branch E, Division of Reactor Projects  
ATTACHMENT: Supplemental Information

## SUMMARY OF FINDINGS

IR05000397-02-03; on 6/23/2002-9/21/2002; Energy Northwest; Columbia Generating Station. Integrated Inspection Report; Other.

The report covers a 13-week period of routine resident and regional inspection activities from June 23 through September 21, 2002. The inspection identified one finding of very low safety significance (Green). The finding was a noncited violation. The significance of findings is indicated by their color (Green, White, Yellow, or Red) using Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. 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. Inspector Identified Findings

#### Cornerstone: Mitigating Systems

- Green. The licensee did not properly design fire protection systems, including flood barriers, to ensure that water from the systems did not affect safety-related equipment (a self disclosing issue). A spill of 15 to 20 gallons of water on the cable spreading room floor leaked through the floor to safety-related components below. The inspectors also identified that the licensee had missed multiple opportunities to identify and correct the deficiencies earlier.

A violation of 10 CFR 50.48a was identified that is being treated as a noncited violation in accordance with Section V1.A.1 of the NRC Enforcement Policy. The inspectors determined that the significance was more than minor because the problem affected the reactor safety cornerstone, mitigating systems objective. Specifically, leakage through the cable spreading room floor following the actuation, rupture or inadvertent operation of the fire protection sprinkler system could adversely impact safety-related switchgear associated with Division I and II systems. The inspectors utilized the NRC's significance determination process (Manual Chapter 0609, SDP Phase 1 Worksheet for IE [initiating event], MS [mitigating system], and B [barrier] Cornerstone, dated March 3, 2002) and determined that the issue was of very low safety significance. The finding was determined to involve a design deficiency confirmed not to result in loss of function per Generic Letter 91-18, Revision 1 (Section 40A5).

### B. Licensee Identified Violations

None

## Report Details

### Summary of Plant Status:

From June 23 through July 8, 2002, operators varied Columbia Generating Station power between 45 percent and 100 percent at the request of the Bonneville Power Authority. Operators maintained 100 percent power from July 8 through July 19, when Bonneville Power Authority requested a down power to 85 percent. On July 22, plant power returned to 100 percent. On August 31, the licensee reduced plant power to 65 percent to accommodate troubleshooting on reactor feedwater Pump A control circuitry. Operators achieved 100 percent power on September 4, where it remained for the rest of the report period.

### **1. REACTOR SAFETY**

Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

#### 1R04 Equipment Alignments (71111.04)

##### .1 Partial System Walkdowns

###### a. Inspection Scope

The inspectors completed three partial system walkdowns of safety-significant equipment during the inspection period. The inspectors reviewed the systems alignments and readiness during periods when redundant equipment was removed from service. The inspectors reviewed the following system alignments during the period:

- Division I Standby Service Water System: On July 11, 2002, the inspectors walked down the mechanical and electrical alignments of the Division I standby service water system while the Division II system was out of service for corrective maintenance. The inspectors reviewed the alignment of critical system components using Procedure 2.4.5, "Standby Service Water System," Revision 42, and Drawing M524, "Flow Diagram, Standby Service Water System," Sheets 1, 2 and 3 (Revisions 102, 66 and 10, respectively).
- Division I Emergency Diesel Generator: On June 26, 2002, the inspectors walked down to verify the correct mechanical and electrical alignment of the Division I emergency diesel generator while the Division III emergency diesel generator was unavailable for scheduled maintenance. The alignments of critical portions of the system were reviewed using Procedure 2.7.2.B, "Emergency Diesel Generator Division 2," Revision 27, and Drawing M512-2, "Diesel Generator Miscellaneous Systems," Revision 28.
- Division II Standby Gas Treatment System: On July 11, 2002, the inspectors walked down the mechanical and electrical alignment of the Division II standby gas treatment system while the Division I standby gas treatment system was out of service for scheduled maintenance. The inspectors compared the alignment of critical components against Procedure 2.3.5 "Division II standby gas treatment system," Revision 21, and Drawing M544 "Flow Diagram, Heating, Ventilation and Air-conditioning, Standby Gas Treatment," Revision 66.

b. Findings

No findings of significance were identified.

.2 Complete Reactor Core Isolation Cooling System Walkdown

a. Inspection Scope

On July 2, 2002, the inspectors completed a walkdown verification of the reactor core isolation cooling system alignment. The inspectors also assessed operability and conformance with licensing requirements and commitments by in-office review. The inspectors considered the licensee's corrective measures to address related conditions adverse to quality. The inspectors reviewed the following documents during the inspection:

- System Operating Procedure 2.4.6, "Reactor Core Isolation Cooling System," Revision 33
- Drawing M519, Flow Diagram, "Reactor Core Isolation Cooling System," Revision 83
- Electrical Wiring Diagram E505, "DC One Line Diagram," Revision 10
- Electrical Wiring Diagram E503, "Auxiliary One Line Diagram," Sheet 7, Revision 17
- Problem Evaluation Request 200-0098, "Reactor Core Isolation Cooling Drive Turbine Inboard Bering Lube Oil Level Below Minimum Required," January 12, 2000
- Problem Evaluation Request 201-0718, "Adverse Trend in Urgent Project Initiation," May 1, 2002

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors performed fire protection walkdowns of five selected areas to verify operational status and material condition of detection and mitigation systems, passive fire barriers and fire suppression equipment. The inspectors verified the licensee's implementation of controls for combustible materials and ignition sources. The inspectors compared observed plant conditions against descriptions and commitments described in the Final Safety Analysis Report, Section 9.5.1, "Fire Protection System," and Appendix F, "Fire Protection Evaluation." The inspected fire areas included:



- Fire Areas DG-8 and DG-9, Division I and II Diesel Generator Day Tank Rooms 1A and 1B, walked down on June 24, 2002
- Fire Area DG-1, Division III diesel generator room, walked down on June 24, 2002
- Fire Area DG-10, deluge valve equipment room, walked down on June 4, 2002
- Fire Area DG-2, Diesel Generator Room 1A, walked down on August 9, 2002
- Fire Area R-1, Elevation 606, general equipment area, refueling floor, walked down on August 9, 2002

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors performed an in-office review and independently evaluated the licensee's maintenance effectiveness by reviewing the availability and reliability of risk-significant structures, systems and components. The inspectors also reviewed the licensee's implementation of the Maintenance Rule for the following two plant components that exhibited performance problems.

- A main steam line leakage control relay failed to change state, Problem Evaluation Request 202-1476, May 14, 2002
- Radwaste Mixed Air Fan 53A was not operating, which resulted in high temperatures in the reactor protection system and a battery charger room, Problem Evaluation Request 202-0820, March 16, 2002

The inspectors utilized the following documents as criteria for this inspection:

- Columbia Generating Station Maintenance Rule Program Status Report for January through June 2002
- Procedure TI 4.22, "Maintenance Rule Program," Revision 4
- Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2
- NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed six planned and emergent maintenance-risk assessments performed per 10 CFR 50.65(a)(4). The inspectors considered the accuracy and completeness of information in the licensee-risk assessments. The inspectors also used Procedure 1.5.14, "Risk Assessment and Management for Maintenance/Surveillance Activities," Revision 4, and Operations Instruction, OI-49, "Protected Systems," Revision A, during the review. The inspection sample included:

- Planned maintenance on the Division III emergency diesel generator bleeder resistor and air handling units, performed on June 26, 2002
- Procedure OSP-SLC/IST-Q701, "Standby Liquid Control Pumps Operability Test," performed on July 2, 2002
- Failure of Reactor Feed Pump Turbine 1A to reset on July 8, 2002, which extended the planned outage, Problem Evaluation Request 202-1981
- Emergent maintenance on the Division I standby service water system due to a through wall leak on July 7, 2002, Problem Evaluation Requests 202-1977 and 202-1979
- Planned maintenance of Residual Heat Removal Pump 2C for flow indicator calibration, Work Order 01042870, performed on September 9, 2002
- Planned maintenance on Reactor Feedwater Pump B, from August 31 to September 1, 2002

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed six licensee operability evaluations for degraded equipment conditions. The inspectors reviewed the adequacy of the licensee's technical evaluation and implementation of compensatory measures considering overall plant risk. The inspectors also compared each operability review against system-safety requirements described in the Final Safety Analysis Report, plant Technical Specifications and Technical Specification Basis documents. The inspectors reviewed the following plant operability evaluations:

- Flooding calculation used incorrect fire suppression system flow rate for maximum flood height, Problem Evaluation Request 202-1676, June 5, 2002
- Water spilled on the cable spreading room floor and leaked into the west remote shutdown room, Problem Evaluation Requests 202-1365 and 202-1408, May 7, 2002
- Two failed bleeder resistors in Battery Charger E-C2-1, Problem Evaluation Request 202-2569, September 10, 2002
- Speed of Reactor Feedwater Pump B fluctuating, Problem Evaluation Request 202-2630, September 18, 2002
- Diesel generator air system pressure control Valve DSA-PCV-1B not properly maintaining pressure, Problem Evaluation Request 202-2592, September 11, 2002
- Turbine Throttle Valve 2 position switch failed to reset during test, Problem Evaluation Request 202-2511, August 31, 2002

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

On September 10, 2002, the inspectors reviewed the plant tracking list summary of operator workarounds. The inspectors evaluated the potential affects of the workarounds on the operator's ability to implement abnormal or emergency operating procedures and the cumulative effects of workarounds on the reliability and availability of plant systems.

b. Findings

No findings of significance were identified.

1R17 Biennial Permanent Plant Modification Inspection (71111.17)

a. Inspection Scope

The inspectors reviewed seven permanent plant modification packages and associated documentation, such as problem evaluation requests, drawings and calculations associated with the specific modifications, to verify that they were performed in accordance with regulatory requirements and plant procedures. The inspectors also reviewed procedures governing plant modifications to evaluate the effectiveness of the programs for implementing modifications to risk-significant systems, structures and

components, such that these changes did not adversely affect the design and licensing basis of the facility. Permanent plant modifications and procedures reviewed are listed in an attachment to this report.

The inspectors interviewed the cognizant engineers for selected modifications as to their understanding of the modification packages.

b. Observations and Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors witnessed or completed an in-office review of seven postmaintenance tests. The inspectors also considered whether the licensee properly implemented procedural controls, as applicable, and that each test adequately demonstrated equipment operability. The inspectors also considered whether the licensee met Technical Specification and licensing basis requirements. The inspectors reviewed the following postmaintenance tests:

- Work Order 01046655, Standby service water system pipe repair, performed on July 10, 2002 - direct observation
- Work Order 01031771, Reactor core isolation cooling pump repair, performed on August 8, 2002 - in-office review
- Work Order 01033692, Reactor core isolation cooling system steam line drain pot and level switch repairs, performed on August 6, 2002 - in-office review
- Work Order 01047439, Continuous withdrawal switch replacement and testing. Procedure OSP-CRD-W701, "Control Rod Exercise of Fully Withdrawn Rods (Mode 1)," Revision 5, completed on July 24, 2002 - direct observation
- Work Request 29025720, Retest of Valve RHR-V-48A following failure and repairs, July 16, 2002 - in-office review
- Work Order 01046655, Division II, standby service water piping repairs, July 10, 2002 - direct observation
- Work Order 01048130, Postmaintenance test of reactor feedpump turbine electro-hydraulic Actuator RFT-EHO-1B, September 2, 2002 - in-office review

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors directly observed or performed in-office reviews to verify that six surveillance tests met Technical Specification, Final Safety Analysis Report, and procedural requirements. The inspectors determined whether each surveillance test adequately demonstrated that systems were capable of performing their safety and design-basis functions. The inspectors specifically evaluated surveillance testing for preconditioning, adequate acceptance criteria, calibration of test equipment and proper equipment restoration. The surveillance activities included:

- Procedure FO-TK-1, "Water Check," Revision 0, performed on June 29, 2002 - in-office review
- Procedure OSP-CONT/ISI-Q701, "Containment Supply Purge and Containment Exhaust Purge Containment Isolation Valve Operability," Revision 5, performed on June 28, 2002 - in-office review
- Procedure OSP-CRD-W701, "Control Rod Exercise of Fully Withdrawn Rods," Revision 5, performed on June 28, 2002 - in-office review
- Procedure TSP-THERM-C101, "Power Distribution Limits," Revision 2, performed on June 29, 2002 - in-office review
- Procedure OSP-SLC/IST-Q701, "Standby Liquid Control Pumps Operability Test," performed on July 2, 2002 - direct observation
- Procedure OSP-SW/IST-Q702, "Standby Service Water Loop B Operability," performed on July 2, 2002 - in-office review

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

Occupational Radiation Safety [OS]

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspectors interviewed radiation workers and radiation protection personnel involved in high dose rate and high exposure jobs. The inspectors conducted plant walkdowns within the radiologically controlled area and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements:

- Area postings and other controls for airborne radioactivity areas, radiation areas, high radiation areas, high-high radiation areas, and very high radiation areas
- Radiation work permits and radiological surveys involving airborne radioactivity areas and high radiation areas
- Access controls and surveys for the following radiation work permits (RWPs) involving high radiation dose work: (RWP 30000598, RWP 30000207, RWP 30000281, RWP 30000395, and RWP 30000206)
- Dosimetry placement for work involving a potential significant dose gradient
- Controls involved with the storage of highly radioactive items in the spent fuel pool for the following
- Radiation Protection Audit Reports AU-RP-01 and AU-RP-01-3, Radiation Protection Department Self-Assessments SA-01-42, SA-01-43 SA-01-46, SA-01-91, SA-01-94, SA-02-41, and SA-02-49 and Quality Department Continuous Monitoring Report 2<sup>nd</sup> Quarter 2001 involving high radiation area controls and radiological work practices
- A summary of access controls and high radiation area work practice related Problem Evaluation Requests written since May 2001 and selected specific examples: (201-0886, 201-0768, 201-1022, 201-1292, 201-1316, 201-1381, 201-1452, 201-1587, 201-2701, 202-0218, 202-0380, 202-1781)

b. Findings

No findings of significance were identified.

**3. Safeguards**

Physical Protection (PP)

3PP3 Response to Contingency Events (71130.03)

The Office of Homeland Security developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. The NRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "NRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the NRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the

Federal government declaration of threat level Orange. Subsequently, on September 24, 2002, the Office of Homeland Security downgraded the national security threat condition to Yellow and a corresponding reduction in the risk of a terrorist threat.

The inspectors interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level Orange protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES [OA]**

4OA1 Performance Indicator Verification (71151)

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors reviewed corrective action program records for high-high radiation areas (as defined in Technical Specification 5.7), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned exposure occurrences (as defined in Nuclear Energy Institute (NEI) 99-02) for the past 12 months to confirm that these occurrences were properly recorded as performance indicators. Controlled access area entries with exposures greater than 100 millirems within the past 12 months were reviewed, and selected examples were examined to determine whether they were within the dose projections of the governing radiation work permits. The inspectors reviewed whole-body counts or dose estimates if the radiation worker received a committed effective dose equivalent of more than 100 millirems.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed radiological effluent release program corrective action records, licensee event reports, and annual effluent release reports documented during the past four quarters to determine if any doses resulting from effluent releases exceeded the performance indicator thresholds (as defined in NEI 99-02).

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA2 Identification and Resolution of Problems (71152)

One issue associated with poor problem identification and resolution is covered in Section 4OA5.1 below.

4OA5 Other

.1 (Closed) Unresolved Item 50-397/02002-01: Unexpected leaking flood barriers.

Introduction:

The inspectors identified a noncited violation of 10 CFR 50.48a for the failure to properly design fire protection systems, including flood barriers, to ensure that water from the system did not affect safety-related equipment (self-disclosing issue). On May 3, 2002, a spill of 15 to 20 gallons of water occurred on the cable spreading room floor and leaked through the floor onto and around safety-related components on the floor elevation below. The inspectors also identified that the licensee had missed multiple opportunities to identify and correct the deficiencies earlier.

Description:

On May 3, 2002, approximately 15 to 20 gallons of water spilled on the cable spreading room floor. Water leaked through the floor in two places. The floor was required to be leak tight. The licensee identified the leakage paths as: 1) a damaged area caused by spallation; and 2) small cracks in the concrete floor. Division I and II circuits and switchgear were located directly below the floor and some water leaked onto the switchgear housing and into the remote shutdown panel. No damage occurred to the switchgear or the remote shutdown panel.

The inspectors noted that the licensee had not properly treated the concrete floor in accordance with NRC recommendations which were identified in NRC's Branch Technical Position 9.5.1. Specifically, the licensee based their Fire Protection Program on NRC's Branch Technical Position 9.5.1, Appendix A, "Guidelines for Fire Protection for Nuclear Power Plants." The Branch Technical Position recommended guidance contained in NFPA 92M for maintaining concrete floors, which states:

Concrete floors should be inspected frequently for cracks. Damaged floors may be repaired by use of special compounds. Fine hairline cracks may, in most cases, be sealed with an application of floor paint.



Contrary to this guidance, the licensee did not frequently inspect the concrete floors for cracks and did not generally repair cracks when observed.

As corrective measures, the licensee performed additional inspections and sealed all appropriate unsealed concrete floors with an approved sealer. The licensee also found other degraded but operable penetration seals, which were promptly repaired. The inspectors considered the licensee's corrective measures to seal the floor cracks and areas of spallation acceptable.

Analysis:

The inspectors and the licensee evaluated the extent of the condition and the potential impact to safety-related equipment assuming inadvertent actuation or rupture of the fire protection system. The inspectors observed that the spill covered only a small area of the large floor. Actuation of the room's fire deluge system would likely flood most of the floor and result in additional leaks, since the floor contained hundreds of small cracks. In response to this concern, the licensee reviewed the plant's history of leakage through plant concrete floors, which was generally less than ½ cup in each instances (varying from ½ to 2 hours exposure time). In no instance did any leakage render equipment inoperable. The licensee concluded that the barrier was degraded but operable as discussed in Generic Letter 91-18, "Informative to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded And Nonconforming Conditions," Revision 1. The licensee based this determination on the plant history and because the relatively small amount of leakage that would occur, even through multiple locations, would not likely impact equipment operability. Applicable operability evaluation assessed in Section 1R15.

The inspectors reviewed the licensee's operability evaluation and the areas that could be effected by leakage through the floor. The various switchgear components located on the floor elevations below are generally shielded from water by their housings. The inspectors noted that the licensee initially concluded that there would not be any increased risk of adversely effecting components for either division from a flood or sprinkler actuation in the cable spreading room. The inspectors challenged this position given water had found a pathway into the remote shutdown panel (no apparent damage to the panel was noted). Based on the observed conditions and the licensee's operability evaluation, the inspectors concluded that there was a very low likely hood of component or system damage from leakage through the cable spreading room floor following the actuation, rupture or inadvertent operation of the fire protection sprinkler system and that the licensees operability evaluation was acceptable.

The inspectors utilized the NRC's significance determination process (Manual Chapter 0609, SDP Phase 1 Worksheet for IE [initiating event], MS [mitigating system], and B [barrier] Cornerstone, dated March 3, 2002) and determined that the issue was of very low safety significance. The finding was determined to involve a design deficiency confirmed not to result in loss of function per Generic Letter 91-18, Revision 1.

The inspectors also identified that the licensee had multiple prior opportunities to identify and correct the problem, which makes the crosscutting issue of Problem Identification and Resolution a contributing factor. For example:

- NRC Information Notice 88-60, "Inadequate Design and Installation of Watertight Penetration Seals," dated August 11, 1988, addressed, in part, leakage pathways through floors.
- Licensee Technical Memoranda 2103, "Leakage Requirements of Penetration Seals," Revisions 0 through 2, initially issued December 1995, required leak tight floors in the cable spreading room but the licensee did not establish acceptable design conditions for the floor.
- PERs 298-0152, dated February, 1998; 298-0157, dated February, 1998; and 299-0376, dated February, 1999, identified floor leakage through the cable spreading room floor and the radwaste building, 525 Elevation Floor (a floor of similar design and construction as the cable spreading room floor). The licensee attributed the leaks to construction joints and sealed the construction joints alone. The licensee did not revisit the NFPA 92M recommendations.
- In 1998 and 2001, engineers performed structural inspections in accordance with Maintenance Rule procedures. While the engineers identified the floor cracks during these inspections, the issue was not properly addressed. The engineers considered the cracks as a cosmetic problem which did not impact barrier function.

Enforcement:

The inspector identified a noncited violation of 10 CFR 50.48(a)1 which requires that the licensee have a fire protection program that meets the requirements of 10 CFR 50, Appendix A, Criterion III. Criterion III requires, in part, that the licensee design its fire fighting systems to assure that their rupture or inadvertent operation will not impair the safety capability of systems important to safety. The licensee's Fire Protection Program, Section D.1.i states, in part, "Potential actuation of fire protection systems has been evaluated to ensure that it would not adversely affect any safety-related equipment." Contrary to the above, as evidenced by past through-floor leakage, the overall system was not designed to assure that its rupture would not adversely affect safety-related equipment. This condition has existed since initial plant construction. This violation is being treated as a noncited violation in accordance with Section V1.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Problem Evaluation Request 202-1408 (NCV 50-397/02003-01).

- .2 (Closed) Licensee Event Report 50-397/2002-001-00: Water leakage pathways through fire-rated floor assemblies. This licensee event report addresses the same issue discussed in the URI 50-397/02002-01 closeout section above. This issue is closed.

4OA6 Management Meetings

Exit Meeting Summary

Regional and resident inspectors conducted three exit meetings with members of licensee management staff during the inspection period. The exit meetings were:

- On September 12, 2002, a senior reactor inspector presented the plant modifications inspection results to Mr. Dale Atkinson, Vice President, Technical Services and other members of licensee management.
- On June 27, 2002, a health physics inspector presented the radiation safety inspection results to Mr. S. Oxenford, Plant General Manager, and other members of licensee management.
- On October 3, 2002, the senior resident inspector presented the remaining inspection results to Mr. Dale Atkinson, Vice President, Technical Services and other members of the licensee's staff.

The licensee acknowledged the inspection results during each meeting. Following the meetings, the inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. The licensee identified no proprietary information.

## ATTACHMENT

### Supplemental Information

#### PARTIAL LIST OF PERSONS CONTACTED

##### Licensee

J. Parrish, Chief Executive Officer  
D. Atkinson, Vice President, Technical Services  
D. Coleman, Manager, Performance Assessment and Regulatory Programs  
D. Feldman, Manager, Operations  
W. Oxenford, Plant General Manager  
C. Perino, Manager, Licensing  
J. Peters, Manager, Radiation Services  
R. Webring, Vice President, Nuclear Generation  
J. Wyrick, Manager, Resource Protection

#### ITEMS OPENED AND CLOSED

##### Items Opened, Closed, and Discussed During this Inspection

##### Opened

None

##### Opened and Closed

50-397/02003-01      NCV              Unexpected leaking flood barrier (Section 4A05)

##### Previous Items Closed

50-397/02002-01      URI              Unexpected leaking flood barrier (Section 4A05)

50-397/2002-003-00    LER              Water leakage paths through fire rated floor assemblies  
(Section 4OA5)

#### DOCUMENTS REVIEWED

##### Modifications (Basic Design Changes)

00120101, "High Pressure Core Spray Circuit Breaker Charging Motor Circuit," 09/09/02  
00105601, "Replace Inverters 2 and 3/Battery Chargers E-C1-1 and 2" 11/27/01  
00116701, "Remove Undervoltage Breaker Trip For RHR-2C and LPCS Pumps," 07/09/01  
00120501, "HPCS-V-12 Pressure Locking / Thermal Binding Modification," 12/4/01  
00120401, "HPCS-V-4 Pressure Locking / Thermal Binding Modification," 12/4/01  
00120301, "RCIC-V-31 Pressure Locking / Thermal Binding Modification," 10/17/01  
00105401, "Protective Relay Coordination," 1/31/02

Problem Evaluation Requests (PERs)

200-0240	201-0460	201-1175	202-1768	298-1820
200-0441	201-0513	201-1178	291-0198	298-1919
200-0926	201-0591	201-1179	294-0074	299-1166
200-1224	201-0750	201-1237	296-0869	299-1193
201-0066	201-0780	201-1354	297-0869	299-1353
201-0335	201-1023	202-0642	298-1496	299-2475
201-0358	201-1167	202-0920	298-1535	299-2635

Procedures

EI 2.8, "Generating Facility Design Change Process," Revision 16  
ABN-STRAINER, "ECCS/RCIC Suction Strainer Plugging," Revision 2  
PPM 1.3.29, "Locked / Panduit Tie Wrap Valve Checklist," Revision 42  
PPM 2.4.6, "Reactor Core Isolation Cooling System," Revision 34  
TSP-CONT-B802, "Low Pressure Hydraulic Testing of Containment Isolation Valves," Revision 1  
OSP-ELEC-M703, "HPCS DG Monthly Operability"  
OSP-HPCS/IST-Q701, "HPCS System Operability"  
ESP-B1DG3-B101, "Surveillance Procedure"  
TSP-LSV-C501, "Load Shed Verification"  
TSP-DG2/LOP-B501, "Standby Diesel Generator DG2 Loss of Power Test"  
TSP-DG2/LOCA-B501, "Standby Diesel Generator DG2 LOCA Test"  
TSP-DG1/LOP-B501, "Standby Diesel Generator DG1 Loss of Power Test"  
TSP-DG1/LOCA-B501, "Standby Diesel Generator DG1 LOCA Test"

Calculations

EQ-02-83-36160-02/CMR 711, "Design Adequacy on HPCS Valve 12," 11/2/00  
ME-02-96-21/CMR 587, "MOV Pressure Locking," 11/1/00  
CMR E/I-02-92-01, Revision 0  
CMR 2.05.05, Revision 7

Drawings

Dwg M519, "Flow Diagram Reactor Core Isolation Cooling System," Revision 84  
Dwg M520, "Flow Diagram HPCS and LPCS Systems Reactor Building," Revision 88  
Dwg M575, "Inverters and Battery Chargers," Revision 37

Other

Equipment Modification 30156, "HPCS-V-4," Revision 0  
Technical Memo 2107, "Washington Public Power Supply System WNP-2 Generic Letter 95-07"  
Pressure Locking and Thermal Binding Evaluation," Revision 0