UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

October 25, 2011

Mr. M.E. Reddemann
Chief Executive Officer
Energy Northwest
P.O. Box 968, Mail Drop 1023
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000397/2011006

Dear Mr. Reddemann:

On September 15, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed a team inspection at Columbia Generating Station. The enclosed report documents the inspection findings discussed on September 15, 2011, with Mr. Brad Sawatzke, Vice-President and Chief Nuclear Officer, and other members of your staff.

The inspection examined activities conducted under your license as they relate to identification and resolution of problems, safety and compliance with the Commission's rules and regulations, and with the conditions of your operating license. The team reviewed selected procedures and records, observed activities, and interviewed personnel. The team also interviewed a representative sample of personnel regarding the condition of your safety conscious work environment.

The team concluded that Columbia Generating Station's corrective action program adequately identified, evaluated, and corrected problems. However, as described in the attached inspection report, the team identified examples of where your staff failed to properly prioritize and thoroughly evaluate problems to reach appropriate resolution. The team determined that your corrective action program effectively reviewed lessons learned from internal and external operating experience, findings from audits and self-assessments were appropriately entered into the corrective action program for resolution, and a healthy safety conscious work environment existed at your station.

This report documents one self-revealing and two NRC-identified findings. All three findings involved violations of NRC requirements and were determined to have very low safety significance (Green). The NRC is treating these violations as noncited violations consistent with Section 2.3.2 of the NRC Enforcement Policy because of the very low safety significance of the violations and because the violations were entered into your corrective action program.

If you contest these noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd., Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U. S. Nuclear

Regulatory Commission, Washington DC 20555-0001; and to the NRC Resident Inspector at Columbia Generating Station. In addition, if you disagree with the cross-cutting aspect associated with any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at 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 NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal, privacy, or proprietary information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Dr. Dale A. Powers, Acting Chief
Technical Support Branch
Division of Reactor Safety

Docket: 50-397
License: NPF-21

Enclosure:
NRC Inspection Report 05000397/2011006
w/Attachments: Attachment 1, Supplemental Information
Attachment 2, Initial Information Request
Attachment 3, Supplemental Information Requests

Distribution via Listserve for Columbia Generating Station

Electronic distribution by RIV:
Regional Administrator (Elmo.Collins@nrc.gov)
Deputy Regional Administrator (Art.Howell@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
DRP Deputy Director (Troy.Pruett@nrc.gov)
DRS Director (Anton.Vegel@nrc.gov)
DRS Deputy Director (Tom.Blount@nrc.gov)
Senior Resident Inspector (Jeremy.Groom@nrc.gov)
Resident Inspector (Mahdi.Hayes@nrc.gov)
Branch Chief, DRP/A (Wayne.Walker@nrc.gov)
Senior Project Engineer, DRP/A (David.Proulx@nrc.gov)
Project Engineer, DRP/A (Christopher.Henderson@nrc.gov)
Columbia Site Secretary (Crystal.Myers@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Branch Chief, DRS/TSB (Dale.Powers@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
OEMail Resource
ROPreports
OEDO RIV Coordinator (Mark.Franke@nrc.gov)
DRS/AA (Loretta.Williams@nrc.gov)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000397
License:	NPF-21
Report:	05000397/2011006
Licensee:	Energy Northwest
Facility:	Columbia Generating Station
Location:	Richland, Washington
Dates:	August 22 through September 15, 2011
Team Leader:	B. Tharakan, Certified Health Physicist, Resident Inspector, South Texas Project
Inspectors:	R. Cohen, Senior Reactor Inspector, Technical Support Branch H. Freeman, Senior Reactor Inspector, Technical Support Branch N. Okonkwo, Reactor Inspector, Engineering Branch 2
Approved By:	Dr. Dale A. Powers, Acting Chief Technical Support Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000397/2011006; 8/22/2011–9/15/2011; Columbia Generating Station; Biennial Baseline Inspection of Identification and Resolution of Problems;

A resident inspector, two senior reactor inspectors, and a reactor inspector conducted the team inspection. The team identified three findings of very low safety significance during this inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Identification and Resolution of Problems

The team reviewed approximately 200 action request/condition reports, work orders, engineering evaluations, root and apparent cause evaluations, and other supporting documentation, to determine if problems were being properly identified, characterized, and entered into the corrective action program for evaluation and resolution. In addition, the team reviewed a sample of system health reports, self-assessments, quality assurance reports, corrective action program metrics including backlog and trend reports, and various other documents related to the corrective action program.

The team concluded that Columbia Generating Station's corrective action program was adequately implemented. However, the team identified some examples where the licensee did not accurately classify the significance of a problem or thoroughly evaluate the condition and identify the appropriate resolution.

The team reviewed approximately 15 quality assurance audits and self-assessments performed since September 2009. The team determined that the audits and self-assessments were thorough, self-critical, and identified problems at a low threshold, and subsequently entered into the corrective action program for resolution.

The team reviewed the licensee's use of operating experience. The team determined that the licensee appropriately evaluated industry operating experience for relevance to their station and entered applicable items in the corrective action program. During the inspection period, the licensee adequately used industry operating experience when performing root cause and apparent cause evaluations.

Based on 32 interviews about the safety conscious work environment, the team determined that workers at the site felt free to report problems to their management without fear of retaliation. The team concluded that a healthy safety conscious work environment existed at Columbia Generating Station.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The team identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Energy Northwest failed to promptly identify and correct degraded flood barrier floor coatings, which protected the Division 2 safety-related electrical switchgear room, remote shutdown room, and main control room from water intrusion. In 2002, flooding above the Division 2 electrical switchgear and remote shutdown rooms resulted in water intrusion into these rooms. The corrective action to prevent recurrence was to apply epoxy paint to the concrete floors above these rooms to ensure the floors would be leak tight. In April 2004, a degraded flood barrier floor coating was identified and operations staff requested an engineering evaluation. An hourly flood watch was established, however, an engineering evaluation was not performed to identify and correct the material deficiency and no justification was provided for establishing an hourly flood watch. The team determined that from April 2004, to September 14, 2011, at least 30 action requests were written that identified degraded epoxy coated flood barriers. Although the flood barriers were eventually patched, no engineering evaluation was performed to identify and correct the material deficiency. The team determined that the flood barriers were degraded approximately 36 percent of the time. The licensee entered this issue into the corrective action program as Action Request/Condition Report 249288.

  The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences and if left uncorrected, could become a more significant safety concern because a flood in the area could adversely affect safety-related equipment. Using NRC Manual Chapter 0609 Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," dated January 10, 2008, the finding initially screened as potentially risk significant due to the flooding hazard, however, it was determined to be of very low risk significance (Green) because there was no actual loss or degradation of the safety function of the equipment protected by the flood barrier. In addition, this finding had a crosscutting aspect in the area of human performance associated with decision making because the licensee failed to communicate to persons who have the need to know in order to perform work safely, the basis for the decision to implement an hourly flood watch and not perform an engineering evaluation in a timely manner [H.1(c)]. (Section 4OA2).

- Green. The team identified three examples of a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow station procedures. The licensee entered these examples into the corrective action program as Action Request/Condition Report 249287.

  The first example was a failure to properly implement the instructions of the station's seismic procedure, PPM 10.2.53, to evaluate and control transient equipment and

materials. Specifically, during this inspection, on August 29 through September 1, 2011, the team identified unsecured bookcases, rolling metal ladders, and loose maintenance carts in the main control room, and barrels stored near a high pressure core spray pump that were not evaluated in accordance with seismic procedures.

The second example was the failure to perform a root cause analysis for long standing problems that have had ineffective corrective actions, as required by Procedure SWP-CAP-06, “Condition Review Group (CRG),” Revision 16, Specifically, between October 2007, and September 15, 2011, multiple examples of the failure to follow seismic procedures have been identified by past NRC inspection teams and licensee internal follow-up actions. Therefore, the team concluded Energy Northwest failed to recognize that a root cause analysis was required to address this long standing issue.

The third example was a failure to promptly implement interim corrective actions as required by Procedure SWP-CAP-01,"Corrective Actions Program." Specifically, after the team identified the improperly stored items on September 1, 2011, the licensee secured the material, but failed to implement any interim corrective actions to reduce the likelihood that the condition would not be repeated until longer term corrective actions could be implemented. On September 13, 2011, when the team asked the licensee about interim corrective actions, the licensee conducted a site stand-down to inform station personnel about the condition and procedural requirements.

The finding was more than minor because it was a programmatic deficiency, which affected the Mitigating Systems Cornerstone objective, and if left uncorrected, could lead to a more significant safety concern because a seismic event could result in the unavailability of systems used to mitigate the consequences of initiating events. Using Inspection Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” the finding was determined to have very low safety significance (Green) because it did not result in an actual loss of a system safety function, did not result in a loss of a single train of safety equipment for greater than its technical specification allowed outage time, did not involve the loss or degradation of equipment specifically designed to mitigate a seismic, flooding, or severe weather initiating event, and did not involve the total loss of any safety function that contributes to an external event initiated core damage accident sequence. In addition, this finding had a crosscutting aspect in the area of human performance, associated with the work control component, because the licensee failed to appropriately plan work on multiple occasions, resulting in job site conditions which may have impacted plant components [H.3(a)]. (Section 4OA2)

Cornerstone: Occupational Radiation Safety

- Green. The team reviewed a self-revealing noncited violation of 10 CFR Part 20.1501(a), for the failure to survey the residual heat removal pump A room after it was secured from service. Specifically, on August 29, 2011, during a tour with the NRC inspection team, the residual heat removal system engineer received a dose

rate alarm. The team left the area and contacted radiation protection. Subsequent surveys identified dose rates were as high as 120 millirem per hour at 30 centimeters from the suction piping of the pump, which required the area to be posted and barricaded as a high radiation area. The licensee appropriately controlled the area, and entered the condition into their corrective action program as Action Request/Condition Report 247542.

The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone exposure control attribute of program and process and it affected the cornerstone objective because it resulted in an unposted high radiation area that affected the licensee's ability to adequately protect workers' health and safety from exposure to radiation. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance because it was not an ALARA finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. In addition, this finding had a crosscutting aspect in the area of human performance associated with the work control component, because the planned work activities did not incorporate the need for compensatory actions (e.g., surveys) to detect delayed changes in radiological conditions [H.3(a)]. (Section 4OA2)

B. Licensee-Identified Violations

None

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152)

The team based the following conclusions on the sample of corrective action documents that were initiated during the assessment period, which ranged from September 17, 2009, to September 15, 2011.

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The inspection team reviewed approximately 200 action request/condition reports, including the associated corrective actions, root cause evaluations, apparent cause evaluations, and direct cause evaluations, from approximately 40,000 that were issued during the inspection period to determine if problems were properly identified, characterized, and entered into the corrective action program for evaluation and resolution. Team members evaluated the licensee's efforts in establishing the scope of problems by reviewing selected logs, work requests, self-assessment and quality assurance audit results, system health reports, operability determinations, trending reports and metrics, surveillance test results, and various other corrective action program documents. The inspectors interviewed station personnel and attended licensee meetings to assess the reporting threshold, prioritization efforts, and evaluation process, as well as, observing the interfaces with the operability assessment and work control processes where applicable. The team's review included verifying that the licensee considered the full extent of cause and extent of condition for problems, as well as how the licensee assessed generic implications and previous occurrences. The team assessed the timeliness and effectiveness of corrective actions, completed or planned, and looked for additional examples of similar problems. Team members conducted interviews with plant personnel to identify other processes that may exist where problems may have been identified and addressed outside the corrective action program.

The team also reviewed corrective action documents associated with past NRC-identified violations to ensure that the corrective actions addressed the issues as described in the inspection reports. The inspectors reviewed a sample of corrective actions closed to other corrective action documents to ensure that corrective actions were still appropriate and timely.

The team considered risk insights from both the NRC and Columbia Generating Station risk assessments to focus the sample selection and plant tours on risk significant systems and components. The team selected the residual heat removal and emergency core cooling systems for this risk-focused review. The team's review was focused on, but not limited to, these systems. The team also expanded their

review to include the last five years of evaluations involving the residual heat removal system, including the associated pumps, valves, and heat exchangers, to determine whether the licensee was addressing repetitive problems effectively.

b. Assessments

1. Assessment - Effectiveness of Problem Identification

The team concluded that, overall, Energy Northwest identified problems at a low threshold and entered conditions adverse to quality into the corrective action program in accordance with their corrective action program guidance and NRC requirements. The team did not identify any conditions adverse to quality that were not entered into the corrective action program. However, during a review of employee concerns program documentation, the team identified several recommendations from investigation reports that did not have an appropriate corrective action identified or assigned within the corrective action program. The licensee wrote Action Request/Condition Report 247605 to address the deficiencies.

The team reviewed the licensee's list of control room deficiencies to assess whether the licensee was adequately controlling the problems. The team found that at the start of the 2011 refueling outage, the licensee had 130 deficiencies that could only be worked on during an outage. These deficiencies were characterized as operator workarounds, operator burdens, control room deficiencies, control room alarms, radwaste control room deficiencies, radwaste control room alarms, reactivity management impacts, danger clearances >90 days, caution clearances >90 days, and operator distractions. During the 2011 refueling outage, the licensee added 58 deficiencies for a total of 188 deficiencies. At the time of the inspectors' review, the licensee had completed repairs to 135 deficiencies, and an additional 26 were in the process of being completed. Therefore, only 27 of 188 deficiencies remained to be addressed during the outage. The inspectors concluded that the licensee was adequately identifying, tracking, controlling, and resolving control room deficiencies during the inspection period.

2. Assessment - Effectiveness of Prioritization and Evaluation of Issues

The team concluded that the licensee appropriately prioritized and evaluated conditions adverse to quality during this assessment period. The team reviewed the prioritization of action request/condition reports guidance found in Procedure SWP- CAP-06, "Condition Review Group," Revision 16. The procedure provides for six levels of severity for a condition: "A", "B1", "B2", "C1", "C2", and "D", in descending order. The team noted the following examples where the prioritization or evaluation of action requests/condition reports did not meet the licensee's procedural guidance. However, the problems were appropriately corrected and did not impact plant safety.

- Action Request/Condition Report 224294 documented an NRC noncited violation (NCV 2010004-01) had been issued for the licensee's failure to perform an

adequate risk assessment during surveillance testing. The licensee inappropriately classified this condition report as a Severity Level D (broke/fix or trend only). The licensee representative stated that this condition report was being addressed in Severity Level C1 Action Request/Condition Report 223429; however, there was no reference to the other condition report.

- Action Request/Condition Report 223429 addressed a number of identified deficiencies with the risk assessment program (i.e., Sentinel). The reviewer identified a total of 17 deficiencies over a one-year period. There were seven cases where there were either no Sentinel flag (code) on the equipment part number (EPN), on the model work order, or had an incorrect flag. There were three cases where the reviews to identify Sentinel impact were inadequate. There were two cases where the report was incomplete or incorrect. The remaining five cases were considered isolated issues. The licensee instituted several additional barriers to ensure that incorrectly coded documents would be discovered prior to work being performed. Per Procedure SWP-CAP-06, programmatic issues should be addressed as a Severity Level B condition report; however, the licensee addressed this condition report as a Severity Level C1.

- Action Request/Condition Report 234537 identified cracks on safety-related breaker HPCS-42-4A3B. This action request/condition report was assigned at a Severity Level D and closed to actions taken. The actions performed by the licensee were limited to performing prompt operability determination without investigating the cause and source of the cracks. The licensee initiated Action Request/Condition Report 248457 to upgrade Action Request/Condition Report 234537 from Severity Level D and assign a corrective action to determine the cause of the cracks. The licensee was also re-evaluating the prompt operability determination and had successfully inspected the breaker prior to plant start-up.

- Action Request/Condition Report 231971 documented an NRC noncited violation (NCV 2010005-02) for the licensee's failure to include acceptance criteria appropriate to the circumstance in Surveillance Testing Procedure ESP-B11-A101, "12 Month Battery Inspection of 125Vdc E-B1-1," Revision 5. The evaluation in the condition report stated that "this was a first time evolution using a new procedure and those batteries had never been replaced online before." The evaluation does not address why all aspects and design interfaces were not addressed. Specifically, licensee personnel listed a non-conservative inter-tier resistance value as the acceptance criterion, which led to this degraded condition being unanalyzed for three years. The licensee did not address why the acceptance criterion in the procedure was not correctly updated. Consequently, the licensee initiated Action Request/Condition Report 248359 for this oversight.

- Action Request/Condition Report 238032 documents a loss of reactor coolant system inventory during reactor pressure vessel flood-up. NRC resident inspectors determined that the method by which the licensee maintained system

configuration during reactor vessel flood-up was inadequate and documented a finding in NRC Inspection Report 2011003. Plant Procedure Manual (PPM) 10.3.22, "Reactor Pressure Vessel Reassembly," Revision 29, failed to ensure that the reactor head vent valves were closed in preparation to flood the main steam lines. Additionally, on May 16-17, 2007, operators were performing a similar operation to flood-up the reactor pressure vessel cavity when an estimated 25,000 gallons of reactor coolant system water was inadvertently lost because the reactor vessel head vent valves were open during vessel flood-up. This event had been documented in Problem Evaluation Request 207-0211. This report determined that the apparent cause of the event was the failure to recognize plant configuration during flood-up operations with the potential flow path from the reactor pressure vessel to the under vessel sump via the main steam line system. The licensee addressed Action Request/Condition Report 238032 as a Severity Level C2, and revised Procedure PPM 10.3.21, "Reactor Pressure Vessel Disassembly" on June 28, 2011. The inspectors noted that the licensee failed to take advantage of an evaluation in 2007 to identify a similar vulnerability in a similar procedure (disassembly vs. reassembly).

3. Assessment – Effectiveness of Corrective Action Program

Overall, the team concluded that the licensee generally developed appropriate corrective actions and effectively addressed problems. However, the team noted the following example where the closure documentation was incomplete, which made it difficult to determine if the corrective actions were implemented.

- Action Request/Condition Report 203348 documented an NRC noncited violation (NCV 2009008-03) of Foreign Material Exclusion (FME) requirements for failure to adequately clean out the drywell. Action 4 of Action Request/Condition Report 203348 directed the creation of a model work order for the FME close-out inspection and provided specific details on what should be included in the work order. Action 4 indicates completion on October 26, 2009, but a review of the work order revealed that none of the actions were included. Instead, the actions were included in Procedure SOP-ENTRY-DW, "Personnel Entry into Drywell." Procedure SWP-CAP-01, "Corrective Action Completion", Section 4.15 paragraph 4.15.1.d. states, in part, that "if a CA [corrective action] is not going to be implemented as written, closed with no action, or cancelled; then the closure narrative should include a clearly stated justification." Although the documentation was incomplete, the team determined that corrective action was appropriate for the condition.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The team examined the licensee's program for reviewing industry operating experience, including reviewing the governing procedure and self-assessments. The team reviewed a sample of industry operating experience evaluations to assess whether the licensee had appropriately evaluated the notifications for relevance to

the facility. The team also reviewed assigned actions to ensure they were appropriate. The team reviewed a sample of root and apparent cause evaluations to ensure that the licensee had appropriately included industry operating experience.

b. Assessment

Overall, the team determined that the licensee appropriately evaluated industry operating experience for relevance to the facility. The team determined that the licensee had entered all applicable items into the corrective action program in accordance with station procedures. The team noted that the licensee had an effective methodology for entering and tracking items into the site operating experience database and into the corrective action program as Action Request/Operational Experience Reports. The licensee used the same timeliness and management review requirements as those used for action request/condition reports. The team concluded that the licensee evaluated industry operating experience when performing root cause and apparent cause evaluations. The licensee appropriately incorporated both internal and external operating experience into lessons-learned for training and pre-job briefs.

In addition, the team reviewed six NRC information notices issued during the inspection period and found that in all cases, the licensee wrote a condition report to document the assessment and the applicability of the information notice to their facility. The team found the assessments were clearly documented and appropriate for the circumstances.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The team reviewed a sample of licensee self-assessments and audits to assess whether the licensee was regularly identifying performance trends and effectively addressing them. The team also reviewed audit reports to assess the effectiveness of assessments in specific areas. The specific self-assessment documents and audits reviewed are listed in the attachment.

b. Assessment

Over the inspection period, the licensee produced dozens of self-assessments and quality assurance audits. The team reviewed 15 audits and self-assessments. The licensee was effective in utilizing experts from outside the company, to help assess performance, and appropriately entered deficient conditions into the corrective action program for resolution. The team concluded that the licensee's self-assessments and audits were effective in early identification of problems. The team concluded that the licensee had a thorough and self-critical self-assessment and audit process.

.4 Assessment of Safety conscious Work Environment

a. Inspection Scope

The inspection team conducted individual and group interviews consisting of 32 station personnel. The interviewees represented various functional organizations and ranged across contractor and station staff. The team also conducted individual interviews as part of their interaction with plant staff during the inspection. These sessions were designed to elicit a qualitative assessment of the degree to which the participants believed the Energy Northwest had established and maintained a safety conscious work environment at Columbia Generating Station and were based upon the NRC's definition of a safety conscious work environment. The NRC defines safety conscious work environment as:

> An environment in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation and where such concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to employees.

b. Assessment

The team determined that the licensee maintained a safety conscious work environment. Based upon the responses received during the interviews, the team concluded that the licensee had established and was maintaining an environment where workers felt free to raise safety concerns both to their management and to the NRC without fear of retaliation. Most employees indicated that they would raise safety concerns to their immediate supervisor. Most employees indicated they would use the chain of command or contact the NRC's resident inspectors if their concerns were not being adequately addressed. None of the individuals could recall any occasions where they, or another employee, had been subjected to discrimination. None of the individuals could provide examples where plant management had failed to take actions to prevent retaliation against individuals who raised safety concerns. Several employees mentioned that they would write action request/condition reports, in addition to raising concerns to their supervisors.

However, the NRC inspection team noted that there seemed to be a lack of awareness of the Employee Concerns Program, and that it may be underused as an asset for raising safety concerns. Most employees expressed that they were not aware that the Employee Concerns Program was an avenue to raise safety concerns. Some employees commented that they believed it was for human resource issues only. Also, about 20 percent of the employees interviewed were either not aware that Energy Northwest had a safety conscious work environment policy or could not describe what the policy stated. The inspectors informed station management about this observation, and Energy Northwest was considering providing recurring training on the station's safety conscious work environment policy.

.5 Specific Issues Identified During This Inspection

a. Failure to Promptly Identify and Correct Degraded Flood Barriers

Introduction. The team identified a Green noncited violation of 10 CFR 50, Appendix B Criterion XVI, "Corrective Action," because Energy Northwest failed to promptly identify and correct degraded flood barrier floor coatings, which protected the Division 2 safety-related electrical switchgear room, remote shutdown room, and main control room from water intrusion. Specifically, from April 2004, to September 14, 2011, at least 30 action requests were written that identified degraded epoxy coated flood barriers; however, no engineering evaluation was performed to identify and correct the deficiency.

Description. In May 2002, as documented in Problem Evaluation Report 202-1408, a flood occurred in the cable spreading room of the Radwaste Building 484-foot elevation during testing of the fire suppression system. Approximately 20 gallons of water were spilled on to the floor, and about 15 minutes later, the main control room received a ground alarm for a 125-volt DC safety-related battery. Investigation of the alarm by station personnel identified that water leaked through cracks in the concrete floor slab into the Division 2 critical 4160-volt AC electrical switchgear and remote shutdown rooms. These rooms are opposite post fire safe shutdown areas. Leakage into these rooms was through shrinkage cracks in the reinforced concrete floor slab that resulted either from initial curing of the concrete or from reinforcement anchors drilled into the concrete. This condition also existed for the entire 525-foot elevation (the elevation directly above the main control room). This event was described by the licensee as a significant condition adverse to quality. The corrective action to prevent recurrence was to apply epoxy to the floors to make them leak tight.

In April 2004, a credited flood barrier coating delaminated and cracked as documented in Action Request/Condition Report 21840. The floor coating was subsequently repaired; however, operations staff requested that an engineering evaluation be performed to ensure operability.

In July 2010, NRC resident inspectors identified degraded flood barriers in the cable spreading room of the Radwaste Building 484-foot elevation and brought it to the attention of station management. Shortly after the licensee repaired the flood barrier, the area was flooded. The licensee indicated this event was a near miss. Part of the licensee's corrective actions included more frequent inspections of the area and quicker repairs when degraded barriers were identified. However, no engineering evaluations were performed that justified the adequacy of the floor coatings, operability of the equipment, or the basis for establishing an hourly flood watch.

During this inspection, the team toured the radwaste building, reviewed documentation, and interviewed station personnel with knowledge of the conditions. The team identified that the licensee categorized each degraded flood barrier at a Severity Level D - Broke Fix. Severity Level D is for conditions not adverse to quality and is the lowest of six (A, B1, B2, C1, C2, D) severity levels within the licensee's corrective action program. The team determined that degradation of a credited flood barrier warranted a higher severity

level classification because it was a condition adverse to quality. Considering the repetitive nature of the material deficiency, the team determined that the licensee should have identified this condition at a severity level B2 or higher and initiated an apparent cause evaluation or root cause evaluation per Procedure SWP-CAP-06, "Condition Review Group (CRG)," Revision 16. Energy Northwest initiated Action Request/Condition Report 249288 to address this concern.

The team also questioned the licensee's operability determination for the degraded flood barrier, and the basis for the implementation of a barrier impairment and flood watch. The team noted that licensee corrective action program Procedure SWP-CAP-01, Step 4.2.4, required that the material deficiencies resulting in the degraded flood barrier be evaluated for operability or functionality issues in accordance with PPM 1.3.66. An operability determination is also required in accordance with Procedure PPM OI-09, "Operations Standards and Expectations," paragraph 6.2.1, Revision 47. This paragraph states that, "Operations SROs (senior reactor operators) determine equipment operability by evaluating equipment problems to determine if the problem affects the capability of the equipment to perform its design basis function and/or its capability to satisfy required surveillances and testing. Assistance is obtained from engineering and other organizations as necessary to complete the evaluation." Operations staff implemented compensatory measures by issuing barrier impairments and establishing an hourly flood watch to maintain operability. The team requested to review the engineering evaluation that justified the barrier impairment, flood watch, and operability determination. However, the licensee could not locate an engineering evaluation, and concluded that it had not been done.

The team determined that from April 2004, to September 14, 2011, there were no engineering evaluations that supported the barrier impairment, flood watch frequency, or the operability of the plant equipment in the affected area. Over that same time period, the team identified 30 condition reports written about degraded floor coatings that resulted in the flood barriers being degraded approximately 36 percent of the time. The inspection team concluded that the licensee missed multiple opportunities to evaluate the adequacy of the epoxy floor coatings, hourly flood watch, barrier impairment, and operability determination. The team determined that not performing the evaluation was a performance deficiency, and resulted in a failure to promptly identify and correct a condition adverse to quality.

Energy Northwest initiated Engineering Change EC10475 on September 14, 2011, to address the inspectors' concerns and evaluate the effects of degraded floor coatings on credited flood barriers. The team reviewed the evaluation and determined that further evaluation was required because EC10475 did not identify and correct the material deficiency, determine the effects of a flood on a degraded barrier, determine the adequacy of the floor coatings, justify the frequency of the flood watch, prioritize repairs, or determine the threshold for operability of any equipment protected by the flood barriers. Although, the licensee had not thoroughly evaluated the problems with the floor coating, the team observed that the repair time had decreased significantly from 85 days in 2007 to one day in 2011. Energy Northwest wrote Action Request/Condition Reports 247702 and 249288 to address this finding.

Analysis. The failure to promptly identify (properly classify and evaluate degraded flood barriers) and correct conditions adverse to quality (degraded flood barriers) was a performance deficiency. The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences and that if left uncorrected, could become a more significant safety concern because a flood in the area could adversely affect safety-related equipment. Using NRC Manual Chapter 0609 Attachment 4, Phase 1 – "Initial Screening and Characterization of Findings," dated January 10, 2008, the finding initially screened as potentially risk significant due to the flooding hazard, however, it was determined to be of very low risk significance (Green) because there was no actual loss or degradation of the safety function of the equipment protected by the flood barrier. In addition, this finding had a crosscutting aspect in the area of human performance associated with the decision making component because the licensee failed to communicate to persons who have the need to know in order to perform work safely, the basis for the decision to implement an hourly flood watch and not perform an engineering evaluation in a timely manner [(H.1(c)].

Enforcement. Title 10 of the Code of Federal Regulations Part 50, Appendix B, Criterion XVI "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to this requirement, from April 2004, to September 14, 2011, the licensee failed to promptly identify and correct a condition adverse to quality when credited flood barriers were degraded. Because this finding was determined to be of very low safety significance and was entered into the licensee's corrective action program as Action Request/Condition Reports 247702 and 249288, this violation is being treated as a noncited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000397/2011006-01, "Failure to Promptly Identify and Correct Degraded Flood Barriers."

b. Failure to Follow Procedures Resulted in Unsecured Transient Equipment and Ineffective Corrective Actions

Introduction. The team identified three examples of a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow the station's corrective action program and seismic procedures for the control of transient equipment and materials.

Description. On August 29 through September 1, 2011, the team performed walkdowns of the emergency core cooling system pump rooms and the main control room. During these walkdowns, the inspectors identified violations of Energy Northwest Procedure PPM 10.2.53, "Seismic Requirements For Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks," Revision 37. This procedure authorizes the location of transient equipment in close proximity to safety-related equipment.

The team identified two 55 gallon barrels that were stationed in close proximity to the high pressure core spray pump (HPCS-P-1). The license evaluated the condition, and determined that it would be an overturning hazard because it was placed too close to the pump berm. The barrels could fall over during a seismic event, and potentially impact pump operation. Although the plant was in an outage at the time and the HPCS-P-1 pump was not required, it was available and the staging of the equipment was not evaluated or understood by the work craft before placing the barrels near the pump.

In the main control room, the team identified the following inappropriate storage of transient equipment:

- maintenance test cart that could slide during a seismic event because the chocked wheels were ineffective in preventing sliding since the cart could move with little force
- a four case book case with an improper aspect ratio
- electrical test equipment cases
- a large rolling metal ladder
- tool boxes

After the team brought these concerns to Energy Northwest management, the licensee either secured or removed the transient equipment, and entered this issue into their corrective action program as Action Request/Condition Reports 247524 and 247710. The licensee evaluated these conditions and found that although these items were in violation of the station seismic procedure, equipment operability had been maintained.

In 2009, a NRC inspection team noted similar issues when they reviewed the licensee's corrective action program. They found 26 examples during the inspection period where station personnel failed to properly store or restrain items near safety-related equipment. Of the 26 examples, 21 were identified by either the NRC or station quality assurance inspectors. This indicated that station operations and maintenance personnel were not identifying transient equipment storage deficiencies and entering them into the corrective action program at a low threshold. The 2009 team concluded that the multiple failures of plant personnel to follow the requirements to properly secure or to perform an engineering evaluation of equipment in close proximity to sensitive equipment were indicative of a significant programmatic deficiency.

The following are examples where Energy Northwest failed to meet the requirements of Procedure PPM 10.2.53, "Seismic Requirements For Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks," Revision 37. Since the last apparent cause evaluation to determine why the failures occurred, 13 additional issues have been identified, four of which were NRC identified.

- Problem Evaluation Report 207-0443, described an NRC-identified noncited violation documented in Inspection Report 2007005 in which Work Order 01130428-20 placed scaffolding within two inches of safety related equipment.

- Action Request/Condition Report 193537 described an NRC-identified noncited violation documented in Inspection Report 2009002 that identified equipment routinely positioned next to safety-related equipment.

- Action Request/Condition Report 204514, dated September 16, 2009, described house-keeping issues in which NRC inspectors identified equipment located near safety-related systems.

- Action Request/Condition Report 230872 described an NRC-identified noncited violation documented in Inspection Report 2010005 that identified 55 gallon drums positioned next to the standby liquid control system.

- Action Request/Condition Report 244730 documented another occurrence of failing to meet Procedure PPM 10.2.53. In July 2011, an NRC inspection team performed a walkdown of the emergency diesel generator EDG-1 room, and identified that a wheeled toolbox and a lifting beam were stored near safety-related conduits. The safety-related conduits contained power cables for many emergency diesel generator EDG-1 auxiliary systems and service water pump SW-P-1A.

The second example of a failure to follow procedures was for not implementing Station Procedure SWP-CAP-06, “Corrective Action Review Group (CRG),” Revision 16. Attachment 7.1, area L, of the procedure, stated “Severity Level A criteria include long standing problems that have had ineffective corrective actions.” Severity Level A conditions required root cause evaluations. As described above, the team identified multiple examples of failures to follow the seismic procedure over a long period of time without effective corrective actions. Therefore, the team determined that this was a performance deficiency because Energy Northwest failed to properly classify this issue as a Severity Level A condition and perform a root cause evaluation.

The third example of a failure to follow procedures occurred when Energy Northwest failed to implement interim corrective actions. Specifically, while evaluating the conditions identified in Action Request/Condition Report 247524 and 247710, and completing the apparent cause evaluation for Action Request/Condition Report 244730, described above, the licensee failed to implement the following requirements of Station Procedure SWP-CAP-01, “Corrective Action Program,” Revision 24:

- 3.2.2.c, “ensures that identified immediate and/or interim corrective actions are promptly implemented.”

- 3.2.2.e, “ensures corrective action plan includes a corrective action for each identified immediate or interim corrective action.”

- 4.11.1.f, “if CAP actions cannot be implemented in a timely manner, then the plan should include interim actions as necessary.”

On September 13, 2011, when the team asked about interim corrective actions, Energy Northwest conducted a station-wide safety stand-down to communicate the requirements for the proper storage of transient equipment as an interim corrective action until longer term corrective actions could be implemented. This finding was added to Action Request/Condition Report 245159 for resolution.

In addition to Action Request/Condition Report 245159, the licensee wrote Action Request/Condition Reports 248381 and 249287 to address these findings.

Analysis. The failure to: (1) properly stage and evaluate if transient equipment positioned in close proximity to safety related equipment was acceptable, (2) to classify the condition as a Severity Level A and perform a root cause evaluation, and (3) implement interim corrective actions to reduce the likelihood of recurrence, are three examples of a failure to follow procedures and is a performance deficiency. The finding was more than minor because it was a programmatic deficiency, which affected the Mitigating Systems Cornerstone objective, that if left uncorrected, could lead to a more significant safety concern because a seismic event could result in the unavailability of systems used to mitigate the consequences of initiating events. Using Inspection Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” the finding was determined to have very low safety significance (Green) because it did not result in an actual loss of a system safety function, did not result in a loss of a single train of safety equipment for greater than its technical specification allowed outage time, did not involve the loss or degradation of equipment specifically designed to mitigate a seismic, flooding, or severe weather initiating event, and did not involve the total loss of any safety function that contributes to an external event initiated core damage accident sequence. In addition, this finding had a crosscutting aspect in the area of human performance associated with the work control component because the licensee failed to appropriately plan work on multiple occasions, resulting in job site conditions which may have impacted plant components [H.3(a)].

Enforcement. Title 10 of the Code of Federal Regulations Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” requires, in part, that activities affecting quality shall be accomplished in accordance with documented procedures appropriate to the circumstances. Contrary to this requirement, on September 1 - 15, 2011, and other dates, Energy Northwest failed to: (1) properly stage and evaluate the seismic interaction of equipment placed next to safety related components as required by Station Procedure PPM 10.2.53, “Seismic Requirements For Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks,” Revision 37; (2) classify this issue as a Severity Level A condition and perform the required root cause evaluation as required by Station Procedure SWP-CAP-06, “Corrective Action Review Group (CRG),” Revision 16; and (3) implement interim corrective actions to reduce the likelihood the condition would be repeated before longer term actions could be implemented as required by Station Procedure SWP-CAP-01, “Corrective Action Program,” Revision 24. Because this finding was of very low safety

significance and was entered into the licensee's corrective action program as Action Request/Condition Reports 245159, 247710, 248381, and 249287, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000397/2011006-02, "Three Examples of a Failure to Follow Procedures Results in Unsecured Transient Equipment and Ineffective Corrective Actions."

c. Failure to Survey

Introduction. The team reviewed a self-revealing noncited violation of 10 CFR Part 20.1501(a), for the failure to survey the residual heat removal pump A room after it was secured from service. Specifically, on August 29, 2011, during a tour with the NRC inspection team, the residual heat removal system engineer received a dose rate alarm. Dose rates in the area were as high as 120 millirem per hour at 30 centimeters from the suction piping of the pump, which required the area to be posted and barricaded as a high radiation area.

Description. On August 29, 2011, the team toured the residual heat removal A (RHR-A) pump room with the system engineer. A few minutes after the team entered the pump room the system engineer's electronic dosimeter alarmed. The group exited the area and contacted the radiation protection staff. Subsequent surveys of the area by the radiation protection staff indicated dose rates in excess of 100 millirem per hour at 30 centimeters from the source, which required the area to be controlled as a high radiation the area. Detailed surveys indicated that dose rates between the RHR suction piping and the pump were as high as 120 millirem per hour at 30 centimeters. Once the high radiation area was identified, the licensee appropriately controlled the area.

On August 20, 2011, RHR-A pump was secured and RHR-B pump was started for shutdown cooling. The team interviewed radiation protection and operations personnel, reviewed plant logs and surveys, and determined that miscommunication between operations and radiation protection technicians led to a misunderstanding of exactly what time the RHR-A pump would be secured. At 7:30 a.m., on August 20, 2011, the Radiologically Controlled Area Control Point was notified by operations that shutdown cooling would be transferred from RHR-A to RHR-B. At 8:15 a.m., radiation protection technicians performed a survey of both RHR-A and RHR-B pump rooms. This survey was not documented because the swap had not occurred. At approximately 9:45 a.m., radiation protection technicians received another call from operations informing them of the RHR-B pump start, however the exact start time was not provided. Operations did not contact radiation protection technicians again after this time. Radiation protection technicians performed another survey of the pump rooms, and concluded that since the radiological conditions had not changed the swap had not occurred. This survey was not documented.

Control room logs indicate that RHR-B was started at 11:41 a.m., and RHR-A pump was secured at 11:48 a.m. No documented surveys could be located after the pumps were swapped. Station Procedure PPM 11.2.13.1, "Radiation and Contamination Surveys," Revision 28, requires surveys following changes to the RHR system. However, the procedure did not direct surveys to be performed at any particular time after changes to

the RHR system. As a result, the licensee concluded that after some time had elapsed, settling of radioactive particles in the system piping caused radiation levels in the RHR-A pump room to increase resulting in the unidentified high radiation area. Prior to the swap of RHR pumps, the area was surveyed and posted as a radiation area with dose rates in range of 40 - 60 millirem per hour. Therefore, between August 20 and August 29, 2011, survey information for this area was incorrect because there was an unposted high radiation area present with dose rates up to 120 millirem per hour at 30 centimeters from the suction piping of RHR-A pump. The inspectors concluded that the failure to survey violated Energy Northwest and NRC requirements. The licensee entered this condition into their corrective action program as Action Request/Condition Reports 247454 and 247572.

Analysis. The failure to perform a survey to evaluate the magnitude and extent of radiation levels in the residual heat removal A pump room is a performance deficiency. The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone exposure control attribute of program and process, and it affected the cornerstone objective because it resulted in an unposted high radiation area that affected the licensee's ability to adequately protect worker health and safety from exposure to radiation. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance because it was not an ALARA finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. In addition, this finding had a crosscutting aspect in the area of human performance associated with the work control component because the planned work activities did not incorporate the need for compensatory actions (e.g., surveys) to detect delayed changes in radiological conditions [H.3(a)].

Enforcement. Title 10 of the Code of Federal Regulations Part 20.1501(a) requires, in part, that each licensee shall make surveys that evaluate the magnitude and extent of radiation levels. Contrary to the above, between August 20 and August 29, 2011, Energy Northwest failed to make surveys that evaluated the magnitude and extent of radiation levels in the RHR-A pump room. Because this finding was of very low safety significance and was entered into the licensee's corrective action program as Action Request/Condition Reports 247454 and 247572, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the Enforcement Policy: NCV 5000397/2011006-03, "Failure to Survey."

4OA6 Meetings

Exit Meeting Summary

On September 15, 2011, the team presented the inspection results to Mr. Brad Sawatzke, Vice-President and Chief Nuclear Officer, and other members of the licensee staff. The licensee's staff acknowledged the issues presented. The team confirmed that no proprietary information was provided to the team.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

S. Ackley, Supervisor, Maintenance Support
B. Abduljalil, Component Engineer
J. Bekhazi, Manager, Maintenance
I. Borland, Supervisor, Organizational Effectiveness
K. Calibo, Engineer, Design Engineering
S. Christianson, Root Cause Analyst, Organizational Effectiveness
M. Davis, Manager, Radiation Protection
Z. Dunham, Supervisor, Licensing
D. Gregoire, Manager, Regulatory Affairs
W. Harper, Fire Protection Engineer
M. Huiatt, Principal Licensing Engineer, Regulatory Affairs
C. King, Assistant Plant General Manager
B. MacKissock, Plant General Manager
D. Mand, Manager, Design Engineering
R. McQuioid, Principal Engineer
C. Moon, Manager, Training
T. Mustafa, Senior Engineer, Electrical
R. Parmelee, Manager, System Engineering
B. Sawatzke, Chief Nuclear Officer
R. Seidel, Principal Engineer, System Engineering
A. Sperling, Principal Engineer
D. Swank, General Manager, Engineering
R. Torres, Manager, Quality Assurance
R. Walton, Support Specialist, Operations
J. Watt, Program Specialist, Maintenance
S. Wood, Manager, Organizational Effectiveness

NRC Personnel

J. Groom, Senior Resident Inspector
M. Hayes, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000397/2011006-01	NCV	Failure to Promptly Identify and Correct Degraded Flood Barriers (Section 4OA2)
05000397/2011006-02	NCV	Three Examples of a Failure to Follow Procedures Results in Unsecured Transient Equipment and Ineffective Corrective Actions (Section 4OA2)
05000397/2011006-03	NCV	Failure to Survey (Section 4OA2)

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

NUMBER	TITLE	REVISION/DATE
SWP-CAP-01	Corrective Action Program	24
SWP-CAP-03	Operating Experience Program	9
SWP-CAP-05	Corrective Action Review Board	15
SWP-CAP-06	Condition Review Group (CRG)	16
SWP-CAP-07	Trending Program	8
CDPM-01	Cause Determination Practitioners Manual	5
PPM OI-09	Operations Standards and Expectations	47
PPM 1.3.57	Design Basis Event Categories with Hazard Barriers	26
1.3.66	Operability and Functionality Evaluation	20
PPM 10.2.53	Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks	37
11.2.13.1	Radiation and Contamination Surveys	28
PSM 6.14	Management of Nuclear Safety Risks	January 3, 2007
PSM 6.15	Safety Conscious Work Environment	January 2, 2007
GIH-3.4.10	Employee Concerns Program	4
1.3.50	Control of Operator Aids	12
WCI-4	Online Work Control Process	32
1.5.14	Risk Assessment and Management for Maintenance/Surveillance Activities	22
SWP-DES-01	Plant Modifications & Configuration Control	13
SCSI-5-4	Control and Disposition of Non-Conforming Material	1
PDI-5.4	Disposition of Defective Parts Process	0

PROCEDURES

NUMBER	TITLE	REVISION/DATE
SWP-MMP-02	Warehousing	8
SPES-1.6.5	Commercial Grade Dedication	44
GIH-1.3.1	Corrective Action Program	6
PPM-1.3.66	Operability and Functionality Evaluation	20
PPM-1.10.1	Notification and Reportable Event	32
SA-01	Self Assessment/Benchmarking Guidebook	1
CAPI-1.7	Trending Instructions	7
PPM 1.4.7	Control of Supplemental Personnel	15
PPM-10.25.21	Testing & Setting Instantaneous Overcurrent Relays	14
QAP-ASU-01	Audit Performance	2
QAP-ASU-02	Quality Audit Reports	2
SWP-ASU-02	Self Assessment and Benchmark Process	13
PPM-1.3.10C	Control of Transient Combustibles	13

DRAWINGS

NUMBER	TITLE	REVISION / DATE
E507-3	Main Three line Diagram	34

CALCULATIONS/MISCELLANEOUS

NUMBER	TITLE	REVISION/DATE
EC-4542	Engineering Change-Calculation for Relay Lead Sheets and Diesels Generator Breaker	January 31, 2008
NISTIR 6519	National Institute of Standards and Technology Report NISTIR 6519 “Effects of Drying Shrinkage Cracks and Flexural Cracks on Concrete Bulk Permeability	
	5059SCREEN-02-0217	
	Licensee memorandum EN2-PE-02-0028	December 16, 2002
	Technical Memorandum TM-2103	2

EC-10475	Engineering Change EC10475	September 14, 2011
RCE AR 211422	Root Cause Evaluation DG-SYS-A Inoperable due to Evidence of Water	August 19, 2010
RCE AR-192078	Root Cause Analysis Technical Specification 3.8.1 Required Action B.1 not completed within 1 hr of DG-SYS-B being declared inoperable	February 4, 2009
RCE AR 00238830	RC-1 Trip Received when RPS-A Removed from Service	
ACE AR 221560	Apparent Cause Evaluation, Weakness in Industrial OE Screening and Evaluation	September 16, 2010
SEQ-QA-07-01	Non-Conformance and Disposition Report	
FP-02-85-03	Combustible Loading Calculation	

ACTION REQUEST/CONDITION REPORTS/PROBLEM EVALUATION REQUESTS

21840	205028	223037	240930	219585
32751	205140	223429	242105	220449
32997	205260	224294	242522	221204
48036	205387	224718	242831	221560
52309	205873	225234	243040	222597
52334	206052	225630	244315	222884
52841	206111	225647	244469	222963
56418	206164	225650	244730	238934
177262	207245	227552	245038	238943
179386	207577	228043	245158	239013
184668	207673	228058	245159	239438
185009	207691	228060	246002	240212
185299	207967	228119	247524	240213
186883	208134	228466	247534	240826
189355	209020	228723	247702	240929
192078	209314	229416	247710	PER 202-2007
195461	210700	230936	247724	PER 202-2011
197892	210872	230938	247728	PER 202-1408
198732	211422	230945	248359	PER 206-0645
199263	211730	231971	248457	
199303	212848	232472	248498	
200350	213713	232563	248506	
200756	213909	233508	219465	
201679	214472	233567	224786	
202716	214711	233659	221204	
202937	214855	233838	204515	
203348	214964	234537	204624	

ACTION REQUEST/CONDITION REPORTS/PROBLEM EVALUATION REQUESTS

203475	215891	235765	204684
203490	216723	237222	204742
203599	217074	238032	204768
203711	217998	238361	204769
203804	218559	238363	204794
204206	218787	238394	205012
204514	218799	238830	219436

WORK ORDERS

01045228	01168903-01	01197959-01
01096919-01	01168903-15	1183893
01096919-02	01175864-01	2000760
01106675-01	01178220-01	

SELF-ASSESSMENTS AND QUALITY ASSURANCE REPORTS

NUMBER	TITLE	DATE
AU-CA-11	Corrective Action, Trending, Self-Assessment, Operating Experience and Human Performance Programs	March 24, 2011
AU-EN/FP-10	Engineering and Fire Protection Programs	February 18, 2010
AU-EP-10	Emergency Preparedness Programs	March 18, 2010
AU-EP-11	Emergency Preparedness Programs	February 24, 2011
AU-MN-11	Maintenance Program	February 3, 2011
AU-RP/RW-09	Radiation Protection and Process Control Program	November 19, 2009
AU-SE-FD-09	Security and Fitness for Duty	October 22, 2009
SAR 187905	Review Operation Decision Making Process	December 31, 2009
SAR 189446	Operating Experience Program Periodic Self-Assessment	November 12, 2009
SAR 235280	Benchmark Cap Condition Report Timeliness Performance Indicators	March 6, 2011
SAR 205640	Utilities Service Alliance Nuclear Safety Culture Assessment Of Columbia Generating Station	April 16, 2010
SAR 222477	2011 Pre-PI&R NRC Inspection Self Assessment	March 25, 2011
SAR 235292	Benchmark RCE and ACE Timeliness Performance Indicators	March 30, 2011

SELF-ASSESSMENTS AND QUALITY ASSURANCE REPORTS

NUMBER	TITLE	DATE
PER 206-0645	OER CR NRC IN 2006-26- Failure of Magnesium Rotors on Motor Operated Valves Actuators	
SEQ-QA-07-01	Non-Conformance and Disposition Report	
EC-4542	Engineering Change-Calculation for Relay Lead Sheets and Diesels Generator Breaker	January 31, 2008
LER 2009-005-00	Manual Scram due to main Turbine DEH Control System Fluid Leak	January 4, 2010

Initial Information Request

July 5, 2011
Biennial Problem Identification and Resolution Inspection
August 22, 2011-September 16, 2011
Columbia Generating Station
Inspection Report 05000397/2011006

This inspection will cover the period from September 17, 2009, to September 16, 2011. All requested information should be limited to this period or to the date of this request unless otherwise specified. To the extent possible, the requested information should be provided electronically in Adobe PDF or Microsoft Office format. Lists of documents should be provided in Microsoft Excel or a similar sortable format.

A supplemental information request will likely be sent during the week of August 22, 2011.

Please provide the following no later than August 15, 2011:

1. Document Lists
   Note: For these summary lists, please include the document/reference number, the document title or description of the issue, initiation date, current status, and long text descriptions of the issues.

   - Summary list of all corrective action documents related to significant conditions adverse to quality that were opened, closed, or evaluated during the period
   - Summary list of all corrective action documents related to conditions adverse to quality that were opened or closed during the period
   - Summary lists of all corrective action documents which were upgraded or downgraded in priority/significance during the period
   - Summary list of all corrective action documents that subsume or "roll up" one or more smaller issues for the period
   - Summary lists of operator workarounds, engineering review requests and/or operability evaluations, temporary modifications, and control room and safety system deficiencies opened, closed, or evaluated during the period
   - Summary list of plant safety issues raised or addressed by the Employee Concerns Program (or equivalent)
   - Summary list of all Apparent Cause Evaluations completed during the period
   - Summary list of all Root Cause Evaluations planned or in progress but not complete at the end of the period

2. Full Documents with Attachments

a. Root Cause Evaluations completed during the period

b. Quality assurance audits performed during the period

c. All audits/surveillances performed during the period of the Corrective Action Program, of individual corrective actions, and of cause evaluations

d. Corrective action activity reports, functional area self-assessments, and non-NRC third party assessments completed during the period (do not include INPO assessments)

e. Corrective action documents generated during the period for the following:

i. All Cited and Non-Cited Violations issued to Columbia Generating Station

ii. All Licensee Event Reports issued by Columbia Generating Station

f. Corrective action documents generated for the following, if they were determined to be applicable to Columbia Generating Station (for those that were evaluated but determined not to be applicable, provide a summary list):

i. NRC Information Notices, Bulletins, and Generic Letters issued or evaluated during the period

ii. Part 21 reports issued or evaluated during the period

iii. Vendor safety information letters (or equivalent) issued or evaluated during the period

iv. Other external events and/or Operating Experience evaluated for applicability during the period

g. Corrective action documents generated for the following:

i. Emergency planning drills and tabletop exercises performed during the period

ii. Maintenance preventable functional failures which occurred or were evaluated during the period

iii. Adverse trends in equipment, processes, procedures, or programs which were evaluated during the period

iv. Action items generated or addressed by plant safety review committees during the period

3. Logs and Reports

   a. Corrective action performance trending/tracking information generated during the period and broken down by functional organization

   b. Corrective action effectiveness review reports generated during the period

   c. Current system health reports or similar information

   d. Radiation protection event logs during the period

   e. Security event logs and security incidents during the period (sensitive information can be provided by hard copy during first week on site)

   f. Employee Concern Program (or equivalent) logs (sensitive information can be provided by hard copy during first week on site)

   g. List of Training deficiencies, requests for training improvements, and simulator deficiencies for the period

4. Procedures

   a. Corrective action program procedures, to include initiation and evaluation procedures, operability determination procedures, apparent and root cause evaluation/determination procedures, and any other procedures which implement the corrective action program at Columbia Generating Station

   b. Quality Assurance program procedures

   c. Employee Concerns Program (or equivalent) procedures

   d. Procedures which implement/maintain a Safety Conscious Work Environment

5. Other

   a. List of risk significant components and systems

   b. Organization charts for plant staff and long-term/permanent contractors

Note: "Corrective action documents" refers to condition reports, notifications, action requests, cause evaluations, and/or other similar documents, as applicable to Columbia Generating Station.

As it becomes available, but no later than August 15, 2011, this information should be uploaded onto the Certrec IMS website. When these documents have been compiled (and by August 16, 2011), please download these documents onto a CD or DVD and send 4 copies via overnight carrier to:

Harry A. Freeman
U.S. NRC Region IV
612 E. Lamar Blvd.
Suite 400
Arlington, TX 76011-4125

Please note that the NRC is not able to accept electronic documents on thumb drives or other similar digital media. However, CDs and DVDs are acceptable.

Supplemental Information Requests

177262 CR 2/7/2008 Rx building/Turbine building siding damage due to high winds 85 12/9/2010 A 12/10/2010

32997 CR 6/28/2005 Over the last 2.5 years there have been at least 10 CRs init 85 7/25/2011 A 7/28/2011

200350 CR 6/29/2009 Scram for Fire/Lube Oil Leak Main Turbine Bearing #2 85 2/7/2011 A 10/31/2011

204570 CR 9/17/2009 As-found times on two DG2 TD relays not in tolerance 85 10/21/2009 C2 10/21/2009

204684 CR 9/21/2009 CSP-V-96 lost position indication in the control room for ap 85 2/24/2011 B2 2/25/2011

205012 CR 9/25/2009 Potential violation of Primary Containment integrity 85 8/30/2010 B2 8/30/2010

205140 CR 9/29/2009 Bearing oil contains water 85 5/12/2010 B1 5/19/2010

206111 CR 10/18/2009 SW-FI-29 was found valved out 85 12/30/2009 B2 1/4/2010

207673 CR 11/13/2009 CRD-DRVE-3427 double notched from 00 to 04. 85 6/23/2010 B1 6/25/2010

210872 CR 1/11/2010 Control Room Habitability Assessment Commitment Not Met 85 2/9/2011 B1 2/9/2011

211730 CR 1/27/2010 LPCS-P-2 Pump failure due to high vibrations 85 4/29/2010 B1 4/29/2010

214472 CR 3/16/2010 ADVERSE TREND - IDS Zone 18 Performance 85 7/25/2011 B1 7/30/2011

220449 CR 6/25/2010 CSP-V-97 loss of indication 85 12/1/2010 B2 12/1/2010

223037 CR 8/5/2010 DG-ENG-1A2 oil leak 85 9/9/2010 C2 9/9/2010

224718 CR 9/1/2010 Circuit breaker anti-pump relay failed 85 11/4/2010 B2 11/9/2010

225630 CR 9/18/2010 CCH-CR-1A will not be restored within 30 days per LCS 1.7.2 85 1/31/2011 B2 1/31/2011

RHR

204616 CR 9/18/2009 Unable to meet flow requirements of OSP-RHR/IST-Q704. 85 10/20/2009 C1 10/20/2009
205028 CR 9/25/2009 NRC indentified oil forming on RHR 2A drain plug 85 10/20/2009 C2 10/28/2009

205260 CR 9/30/2009 RHR-V-3B failed to indicate full closed 85 10/5/2009 D 10/30/2009

205873 CR 10/13/2009 Disconnect RHR-42-8BA5A would not stay closed in. 85 5/10/2010 D 5/20/2010

209821 CR 12/19/2009 RHR-P-2B oil leak: 1 to 2 drops/hour 85 2/9/2011 C1 3/30/2011

213909 CR 3/6/2010 OSP-RHR-A702 Step 7.19 Pressure Reads 40 psig in LT 40 minut 85 3/23/2010 C1 4/8/2010

214225 CR 3/11/2010 An analysis of HPCS, LPCS, and RHR in recirc mode is needed 85 4/14/2010 C2 4/15/2010

215891 CR 4/11/2010 RHR-P-3 excessive packing leakoff 85 5/3/2010 D 5/11/2010

216723 CR 4/26/2010 RHR-PS-19C found out of during ISP-RHR-Q905 85 5/25/2010 C1 5/27/2010

217074 CR 4/30/2010 RHR-FIS-10C out of tolerance 85 5/20/2010 C1 6/3/2010

218787 CR 5/29/2010 RHR-DPIS-12B out of tolerance during calibration check 85 6/18/2010 C1 7/1/2010

222884 CR 8/4/2010 RHR-DPIS-12A out of tolerance 85 8/23/2010 D 9/3/2010

222963 CR 8/5/2010 RHR-DPIS-29A out of tolerance 85 8/5/2010 D 9/4/2010

223183 CR 8/10/2010 RHR-P-3 vibration is trending up 85 9/10/2010 C1 9/13/2010

223848 CR 8/18/2010 RHR-P-2B lower motor bearing oil sight glass leaking 85 3/17/2011 D 3/28/2011

228043 CR 10/25/2010 Missing nut and bent motor tie rod on RHR-MO-3A 85 12/2/2010 C2 12/31/2010

230936 CR 12/16/2010 RHR-42-8BB5C: Fuse to Fuse Clip Contact appears inadequate 85 1/11/2011 D 1/15/2011

230938 CR 12/16/2010 RHR-42-8BB5B: A Phase fuse installed incorrectly 85 1/11/2011 D 1/15/2011

230945 CR 12/16/2010 RHR-42-8BB7A: Fuse To Fuse Clip Contact Appears Inadequate 85 1/11/2011 D 1/15/2011

232472 CR 1/15/2011 RHR-P-2C upper oil level at low spec 85 1/17/2011 D 2/14/2011

232563 CR 1/17/2011 RHR-DPIS-12A out of tolerance 85 1/18/2011 D 2/16/2011

233659 CR 2/4/2011 RHR-PIS-22B declared non functional at 0941 hours 85 2/7/2011 D 3/6/2011

234381 CR 2/17/2011 RHR-P-2B lower motor bearing needs oil added 85 6/8/2011 D 6/20/2011

237222 CR 4/5/2011 RHR-42-7BA8C:Fuse Installation Does Not Meet EC9076 criteria 85 7/29/2011 D 8/5/2011

238361 CR 4/18/2011 RHR-42-7BA5A disconnect needs lubrication. 85 7/11/2011 D 7/15/2011

238394 CR 4/18/2011 RHR-V-8 Leak Rate Exceeds the 0.15 GPM target (admin limit) 85 5/17/2011 C2 5/19/2011

239438 CR 4/30/2011 RHR-P-2B Seal Cooler has a 2 DPM leak 85 7/28/2011 D 7/28/2011

240213 CR 5/10/2011 RHR-RV-30, Failed as found testing 85 5/31/2011 C2 6/9/2011

240826 CR 5/18/2011 Air Void detected in RHR Loop B 85 6/15/2011 C2 6/17/2011

240929 CR 5/18/2011 Air/Gas void detected in RHR Loop C 85 6/20/2011 C2 7/14/2011

240930 CR 5/18/2011 A 2nd Air/Gas void detected in RHR Loop C 85 6/16/2011 C2 6/17/2011

242105 CR 6/3/2011 RHR-MO-16A, IMPROPER QUALITY CLASS TAPE USED ON MOTOR LEADS 85 7/21/2011 C1 7/21/2011

Leaks

204635 CR 9/19/2009 DO-P-3B2 leaks small amount of fuel oil when running 85 11/23/2009 C1 11/26/2009

205387 CR 10/2/2009 DEH leak during Main Turbine Startup. 85 11/23/2009 C1 12/9/2009

205387 CR 10/2/2009 DEH leak during Main Turbine Startup. 85 11/23/2009 C1 12/9/2009

207250 CR 11/7/2009 DEH leak found at accumulator DEH-TK-1D 85 11/9/2009 D 12/7/2009

207380 CR 11/10/2009 Walkdown identified potential DEH leaks 85 12/29/2009 C1 12/29/2009

207850 CR 11/17/2009 SLC-P-1B has evidence of leakage 85 3/23/2010 D 3/31/2010

207854 CR 11/17/2009 Small oil leak from governor oil sight-glass for DG-ENG-1B1. 85 6/28/2010 C2 6/30/2010

207857 CR 11/17/2009 Multiple oil leaks from DG-ENG-1B1 lower hand hole covers. 85 3/22/2010 D 3/31/2010

209367 CR 12/13/2009 SW-V-12B leaks by 85 6/6/2011 C2 6/30/2011

209821 CR 12/19/2009 RHR-P-2B oil leak: 1 to 2 drops/hour 85 2/9/2011 C1 3/30/2011

211793 CR 1/27/2010 DG-ENG-1A2 Lube oil/ fuel oil leak. 85 8/23/2010 D 9/2/2010

212352 CR 2/4/2010 CMS-SR-14 Leakage 85 3/9/2010 C2 3/9/2010

213886 CR 3/5/2010 HPCS-EHO-1C; leakage noted at 1/8" pipe plug on booster housing 85 4/6/2010 C2 4/8/2010

213902 CR 3/5/2010 Small oil leakage from pipe plug on DG-EHO-1B2 85 3/22/2010 D 4/4/2010

214711 CR 3/21/2010 DG-ENG-1A2 FUEL OIL LEAK 85 4/22/2010 C1 4/22/2010

215891 CR 4/11/2010 RHR-P-3 excessive packing leakoff 85 5/3/2010 D 5/11/2010

216832 CR 4/27/2010 DG-ENG-1B2, Lube Oil Leaks Identified 85 4/29/2010 D 5/27/2010

217998 CR 5/17/2010 Oil leak at the base of DG-2 south engine 85 1/25/2011 D 1/27/2011

219187 CR 6/5/2010 Oil leak on RCIC-P-1 85 7/6/2010 C2 7/7/2010

221030 CR 7/5/2010 Preaction Fire Supression Riser 83 has some leak by 85 12/9/2010 D 12/29/2010

221089 CR 7/6/2010 CMS-LT-2R has a small leak on the swagelock fitting. 85 12/9/2010 D 12/29/2010

223037 CR 8/5/2010 DG-ENG-1A2 oil leak 85 9/9/2010 C2 9/9/2010

223848 CR 8/18/2010 RHR-P-2B lower motor bearing oil sight glass leaking 85 3/17/2011 D 3/28/2011

228525 CR 11/2/2010 HPCS-B1-DG3 CELLS IDENTIFIED WITH LEAK AND CRACK 85 6/20/2011 C2 8/19/2011

229704 CR 11/21/2010 Steam leak, SW corner of MSR-1A 85 7/21/2011 D 7/21/2011

237576 CR 4/9/2011 MS-V-22D Packing Leak 85 5/8/2011 C2 5/11/2011

238160 CR 4/15/2011 CEP-V-2A Flange Leakage 85 5/12/2011 C2 5/16/2011

238286 CR 4/17/2011 Unidentified Source of Leakage into EDR - In Drywell, R20 85 6/21/2011 C2 6/24/2011

238394 CR 4/18/2011 RHR-V-8 Leak Rate Exceeds the 0.15 GPM target (admin limit) 85 5/17/2011 C2 5/19/2011

240155 CR 5/9/2011 RCIC-V-66 AS-LEFT LEAK RATE EXCEEDS ADMIN LIMIT 85 6/2/2011 C2 6/9/2011

241849 CR 6/1/2011 MS-RV-4B, The B solenoid was found to be leaking. 85 6/6/2011 D 9/9/2011

Work Control

238363 CR 4/18/2011 RHR-RV-1A Could not be worked as scheduled 85 5/31/2011 C2 6/24/2011

208351 CR 11/24/2009 Excessive Leakage on LPCS-P-2 Packing During CO Lift 85 12/21/2009 C2 12/24/2009

208899 CR 12/4/2009 HPCS DG turbocharger oil leak during operation. 85 3/18/2010 C2 3/30/2010

239388 CR 4/29/2011 SW-V-2A packing leak not repaired 85 5/24/2011 C1 6/2/2011

242463 CR 6/9/2011 Leak rate for CEP-V-3A, -3B, -4A, -4B still GT Admin limit 85 7/19/2011

C2 7/26/2011

CR 222597

CR 179386

Any CRs written during the inspection period where rework was performed on safety related equipment

Supplemental Information Request

From: Cohen, Ronald
To: "mahuiattjr@energy-northwest.com"
Cc: Tharakan, Binesh; "sjchristianson@energy-northwest.com"
Subject: Request for information related to floor coatings - Please CC requested information to Binesh Tharakan
Date: Friday, September 23, 2011 7:10:28 AM
Attachments: image001.png

Tony,
Please locate and send to me (and CC Binesh) via email, the following request for information related to floor coatings:

1. When did Columbia Generating Station determined that any degradation greater than 0.25 square inch would impact the flood barriers safety function. With this I need a copy of the engineering calculation that established this. Specifically, a description of why any degradation greater than 0.25 square inch would impact the flood barrier safety function.
2. The AR/CRs from 2004 through 2011 (present) that document degraded credited flood barriers. With this, the corrective actions taken and the severity levels of the CR/ARs.

Please provide this information by the close of business Tuesday September 22, 2011.

Thank-you for your support!

Ron Cohen
Senior Reactor Inspector/General Engineering
Technical Support Branch
U. S. Nuclear Regulatory Commission
Region IV
e-mail ronald.cohen@nrc.gov
Cell Phone (509) 845-1369

Supplemental Information Request

From: Cohen, Ronald
To: "mahulattjr@energy-northwest.com"
Cc: Tharakan, Binesh; "sjchristenson@energy-northwest.com"
Subject: Another request for information please related to failure to follow station"s seismic procedure
Date: Friday, September 23, 2011 12:46:53 PM
Attachments: image001.png

Tony,
Another request for information please. This is related to the CGS PI and R inspection team issue with the failure to follow the seismic procedure. Has the Energy Northwest staff documented in an AR/CR that they are assessing whether a root cause analysis would be performed as described by procedure SWP-CAP-01, Corrective Action Program for this issue? If so, can you send me the AR/CR via email and copy Binesh Tharakan? Please provide this information by the close of business, Tuesday September 27, 2011. Thank-you.

Ron Cohen
Senior Reactor Inspector/General Engineering
Technical Support Branch
U. S. Nuclear Regulatory Commission
Region IV
e-mail ronald.cohen@nrc.gov
Cell Phone (509) 845-1369

Supplemental Information Request

From: Tharakan, Binesh
To: Hulatt Jr, Michael A. (Tony)
Subject: CGS PIR Request for additional information
Date: Wednesday, August 24, 2011 5:11:00 PM
Attachments: Columbia Generating Station.doc

Tony,

Please support the following request for additional information by providing full detailed CR reports. You may create a new folder in IMS under item 2 for these subsequent detailed CR requests and another for folder for any other additional info. Please upload at your earliest convenience but no later than Monday.

1. The last 3 years of CRs/ARs associated with floor coating degradation in the cable spreading room, radwaste building, and above the main control room
2. The last 3 years of CRs/ARs associated with fuse installation on safety related equipment
3. The last 3 years of CRs/ARs associated with fire protection issues
4. The last 5 years of CRs/ARs associated with the residual heat removal (RHR) system
5. An alphabetical listing of system designations and abbreviations used onsite including the system description, system engineer name and telephone number. The goal of this request is to help us decipher CRs that use system designations only.
6. I've attached a list of CRs that Nnaerika would like to review in greater detail. Please provide those CRs including attachments on a CD to him on Monday.

Other requests…

1. Please set up a presentation on Monday morning about how your corrective action program works and a demonstration of the computer system you use.
2. We would like to tour the RHR system. Please coordinate this for us.

Thank you,
Binesh Tharakan