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

November 25, 2009

Mr. J. V. Parish
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 05000397/2009008

Dear Mr. J. V. Parish,

On September 17, 2009, 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 17, 2009, with Mr. W. Scott Oxenford, Vice-President, Nuclear Generation, and other members of your staff. A re-exit was conducted by telephone on October 21, 2009, with Mr. Greg Cullen, Regulatory Programs Manager, and 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 concluded that the overall implementation of the Columbia Generating Station's corrective action program was appropriate. The team determined that your staff had a low threshold for identifying problems; however, there were examples identified where problems were not entered into the corrective action program. The team also identified examples where your staff was inconsistent in ensuring problems were thoroughly evaluated and recommended corrective actions completed. Lessons learned from industry operating experience were effectively reviewed, evaluated, and tracked. The team determined that your audit and self-assessment processes were conducted in a thorough and self-critical manner. The team determined that site personnel were willing to raise safety issues and document them in the corrective action program.

This report documents three NRC-identified findings of very low safety significance (Green). These findings were determined to involve violations of NRC requirements. Additionally, two licensee-identified violations, which were determined to be of very low safety significance, are listed in this report. However, because of the very low safety significance of the violations and because they were entered into your corrective action program, the NRC is treating these violations as noncited violations consistent with Section VI.A.1 of the NRC Enforcement Policy.

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, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at Columbia Generating Station. In addition, if you disagree with the characterization of 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. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

Sincerely,

/RA/

Gregory E. Werner, Chief
Plant Support Branch 2
Division of Reactor Safety

Dockets: 50-00397
Licenses: NPF-21

Enclosure:
NRC Inspection Report 05000397/2009008
w/Attachments: Attachment 1, Supplemental Information
Initial Information Request

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000397
License:	NPF-21
Report:	05000397/2009008
Licensee:	Energy Northwest
Facility:	Columbia Generating Station
Location:	Richland, Washington
Dates:	August 31 – October 21, 2009
Team Leader:	A. Barrett, Resident Inspector, Grand Gulf Nuclear Station
Inspectors:	H. Freeman, Senior Reactor Inspector M. Hayes, Resident Inspector, Columbia Generating Station E. Ruesch, Reactor Inspector
Approved By:	Gregory E. Werner, Chief Plant Support Branch 2 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000397/2009008; 8/31/2009 – 9/17/2009; Columbia Generating Station; Biennial Baseline Inspection of Identification and Resolution of Problems.

A senior reactor inspector, two resident inspectors, and a reactor inspector conducted the team inspection. The team identified five 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 sampled approximately 150 action request/condition reports, including their associated work orders, engineering evaluations, root and apparent cause evaluations, and other supporting documentation to ensure that problems are properly identified, characterized, and entered into the corrective action program for evaluation and resolution. In addition, the team reviewed all of the system health reports, a sample of self-assessments and 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 being appropriately implemented. However, the team identified examples where items were not being entered into the corrective program and licensee personnel were inconsistent in ensuring problems were thoroughly evaluated and recommended corrective actions completed. In the area of issue evaluation and prioritization, the team found most samples to be satisfactory; however, the inspectors noted several examples where action request/condition reports were not properly prioritized. The team also identified several corrective actions that were untimely, improperly closed, or not fully completed. The team found that, at the beginning of the inspection period, the licensee was aware of a negative trend in implementation of corrective actions. The team noted that they were making progress in their efforts to address the deficiencies; however, the team concluded that the efforts to improve, to date, have not yet been completely effective. The team also found operability evaluations that used unclear statements or lacked supporting documentation in the justification.

Over the inspection period, the licensee produced a large number of self-assessments and detailed quality assurance reports, with 218 assessments and 22 quality assurance reports generated. Although the team found that the licensee was self-critical, the team concluded that the effectiveness of the assessments, especially for the assessments performed at the beginning of the inspection period, was diminished by being slow or failing to implement recommended improvements. The licensee identified these deficiencies early in the inspection period and the team concluded that the licensee has taken appropriate actions to improve the assessment feedback process.

The team reviewed the licensee's use of operating experience. The licensee appropriately evaluates industry operating experience for relevance to the facility and enters applicable items in the corrective action program. The licensee routinely used industry operating experience when performing root cause and apparent cause evaluations.

Based on four safety-conscious work environment focus group interviews involving a total of 31 licensee employees, individual employee interviews, and a review of the 2009 safety culture survey, the team determined that workers at the site feel free to report problems to their management without fear of retaliation. The team concluded that a safety-conscious work environment exists at Columbia Generating Station.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," which occurred when the licensee failed to promptly correct an identified condition adverse to quality. Specifically, in 1998, the licensee identified an inadequate design of the in keep fill pumps for the reactor core isolation cooling system and emergency core cooling system that resulted in repetitive unexpected failures of the pumps. Corrective actions for this condition adverse to quality had been repeatedly deferred since the condition was originally identified; no effective corrective actions had been taken as of September 2009. The licensee entered this issue into their corrective action program as Action Request/Condition Report 204768.

  This performance deficiency was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the team determined that this performance deficiency was of very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The team determined that this finding had a crosscutting aspect in the resources component of the human performance area because the licensee failed to ensure that resources were available to minimize long-standing equipment issues [H.2(a)].

- Green. A noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was revealed on April 7, 2007, when overheating of a Class 1E power conditioning transformer resulted in a fire. The licensee determined that the failed transformer, which had been installed as part of a July 2000 design change, was of an inappropriate design for its application. The licensee replaced the transformer and entered this issue into their corrective action program as

Action Request/Condition Report 204769.

This performance deficiency was more than minor because it was associated with the design control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the team determined that this performance deficiency was of very low safety significance (Green) because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The team determined that this performance deficiency did not have a crosscutting aspect because it was not indicative of current licensee performance.

- Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to properly implement housekeeping procedures to control transient equipment and materials. Specifically, the inspectors identified loose maintenance carts in both the control room and emergency diesel generator rooms, a large metal ramp in the emergency diesel generator room and improperly stored ladders the emergency core cooling system pump rooms. The licensee either secured or removed the equipment and entered this issue into their corrective action program as Action Request/Condition Report 204514.

  The finding was more than minor because if left uncorrected, the programmatic deficiency could lead to a more significant safety concern. 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. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program area component because the licensee failed to have a low threshold for identifying deficient housekeeping issues [P.1(a)].

B. Licensee-Identified Violations

Two violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violations and the Action Request/Condition Report number are listed in Section 4OA7.

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 in the assessment period, which ranged from April 1, 2007 to August 1, 2009.

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The inspection team reviewed approximately 150 action request/condition reports, including the associated root causes, apparent causes, and direct cause evaluations, from approximately 25,000 that were issued between April 1, 2007 through August 1, 2009, to determine if problems were properly identified, characterized, and entered into the corrective action program for evaluation and resolution. Team members reviewed system health reports, operability determinations, self-assessments, trending reports and metrics, and various other documents related to the corrective action program. The team also evaluated the licensee's efforts in establishing the scope of problems by reviewing selected logs, work requests, self-assessments results, audits, system health reports, action plans, and results from surveillance tests and preventive maintenance tasks. The inspectors reviewed work requests and attended the licensee's daily Action Request/Condition Report Review Group meetings and the Management Review Committee meetings to assess the reporting threshold, prioritization efforts, and significance determination process, as well as observing the interfaces with the operability assessment and work control processes when applicable. The team's review included verifying 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's and Columbia Generating Station's risk assessments to focus the sample selection and plant tours on risk significant systems and components. The team selected the emergency diesel

generator system and the reactor core isolation cooling (RCIC) system for this risk-focused review. The samples reviewed by the team focused on, but were not limited to, these systems. The team also expanded their review to include five years of evaluations involving the emergency diesel generator system to determine whether the licensee was addressing repetitive problems effectively.

b. Assessments

1. Assessment - Effectiveness of Problem Identification

Although the team found that the licensee identified most problems at low thresholds, the team concluded that your staff was inconsistent in ensuring that identified problems were entered into the corrective action program. The team identified nine examples that characterized failures of the licensee to document conditions into the corrective action program and missed opportunities for the licensee to identify problems and adverse trends. The inspection team found that the licensee failed to write action request/condition reports for two team-identified deficiencies. A review of the results of the safety-conscious work environment survey performed in March of 2009 identified reluctance by site personnel to initiate action request/condition reports.

Examples of Ineffective Problem Identification and Documentation

- The team found that plant personnel failed to identify an adverse trend in missed quality control hold points prior to refueling outage 18. Since 2001, the licensee identified 78 missed quality control hold points, up to and including the most recent refueling outage, refueling outage 19 in 2009, where a total of 9 were missed. (Action Request/Condition Report 204531)

- The team reviewed a noncited violation that documented a failure to control a high radiation area. Radiation surveys showed an increasing adverse trend in dose rates that should have been identified prior to a radiation technician receiving a high dose rate alarm. (NCV 05000397/2008003-01)

- During a radiologically controlled area entry, the team identified a survey map that was several days old and had not been revised as required by procedure. The team informed radiation protection personnel of the discrepancy and the survey was updated. However, the radiation protection personnel failed to take action to document the issue in an action request/condition report until prompted by the inspectors on the following day. (Action Request/Condition Report 203100)

- A safety-conscious work environment survey performed in March of 2009, found that seventy-five percent of respondents agreed with the statement, “In the past year, when I knew what needed to be done to correct a problem, I had a tendency to skip writing the condition report, and just fix the problem.” The team

found that this survey result had not been entered into the correction action program. The licensee initiated Action Report/Condition Report 204791.

- During a walk down of the control room, the team identified unsecured items near safety-related panels in the control room. The inspectors informed the shift manager of the deficiencies; however, operations personnel failed to initiate a action request/condition report to investigate the concerns. On a second control room walk down, approximately two weeks later, the inspectors noted that operations personnel failed to secure the items or remove them from the control room. (Action Request/Condition Report 203799)

- The team identified programmatic deficiencies in the licensees housekeeping program. Specifically, the licensee failed to identify and control items in the plant that could be hazards during a seismic event. (Section 4OA2.5.c)

- A 2007 quality assurance report evaluating the effectiveness of the work planning process stated that the work planning group failed to enter deficiencies into the corrective action program. (Self- Assessment SA-2007-0069)

- The team identified a steam plume above the radwaste building. The licensee investigated the deficiency and found that a non-safety related, non-radioactive auxiliary steam relief valve had been lifting since the previous week. The licensee failed to identify this deficiency in an action request/condition report. (Action Request/Condition Report 203700)

- The team identified that the licensee failed to verify that a radioactive source shipment to Susquehanna Nuclear Station was shipped to an authorized receiving licensee as required by 10 CFR Part 31. The team determined that while the licensee's failure to verify the receiving licensee was authorized to receive the shipment was a violation of regulatory requirements, because Susquehanna Nuclear Station had a specific license to possess these materials, this violation was of minor safety significance. Inspection Report 05000397/2007008 documented a licensee-identified violation for shipping material without proper labeling. The licensee failed to identify that the source had been shipped inappropriately. (Action Request/Condition Report 203757)

2. Assessment - Effectiveness of Prioritization and Evaluation of Issues

The licensee performed and documented evaluations of conditions adverse to quality in an appropriate manner during this assessment period. The team noted the following exceptions.

Operability Evaluations

The team selected 25 action request/condition reports that involved operability reviews to assess the quality, timeliness, and prioritization of operability assessments, and noted that the immediate and prompt operability assessments

were completed in a timely manner. However, the team concluded that 3 of the 25 operability assessments lacked the required supporting documentation or had unclear or vague statements. The licensee documented the deficiencies identified by the team in Action Request/Condition Report 205109.

- Action Request/Condition Report 180719 described a relay in the reactor protection system that was loud and making a buzzing sound. The action request/condition report did not include an explanation of why this condition did not affect operation of the relay.
- Action Request/Condition Report 197052 described a deformed lower clevis pin on a main steam relief valve air actuator. The action request/condition report did not include an explanation of why this condition did not affect the operation of the valve.
- Action Request/Condition Report 56880 documented a condition where the high pressure core spray diesel generator failed to indicate voltage and frequency at rated condition. The operability evaluation contained a written statement that was unclear and did not properly describe the condition.

In addition to the 25 samples, the inspectors also reviewed a self-assessment that identified problems with the adequacy of documentation of operability assessments following the transition of the corrective action program to the Passport database system (Action Request/Condition Reports 176197). Also, a quality assurance audit of the operability evaluation program found that 9 out of 30 operability determinations were inadequate in that the "operability determinations did not capture the true nature of the issue or were not worded in a manner that confirms equipment operability."

Prioritization

The team reviewed the prioritization of action request/condition reports and found that the procedural guidance provided in procedure SWP-CAP-06, "Condition Review Group," for grading action request/condition reports lacked specific detail for prioritization. The procedure provides for 6 levels of importance: "A", "B1", "B2", "C1", "C2", and "D", in descending order. Specifically the B2 level designation criteria only stated that the condition must have failed to meet the B1 criteria or that another evaluation process had addressed the condition.

In addition, the team found three examples of conditions adverse to quality where the licensee failed to apply proper grading criteria per procedure SWP-CAP-06. These examples involve conditions adverse to quality that were closed with a "D" level designation that should have, at minimum, been evaluated at a "C1" level per the procedure. This would have required a simple cause evaluation and associated corrective actions. The licensee documented the deficiencies identified by the team in Action Request/Condition Report 208389.

- Action Request/Condition Report 196960 identified a high pressure core spray valve packing leak with boron and rust residue. This action request/condition report was assigned a "D" level and closed to actions taken. The actions performed by the licensee were limited to tightening the valve packing; the licensee performed no investigation into the origin of the Boron.

- Action Request/Condition Report 183386 identified a primary containment isolation valve which failed to open during wetwell ventilation operations. This action request/condition report was assigned a "D" level and closed to actions taken. While the valve's safety function to remain closed was maintained, no documented actions were taken to identify the failure mechanism or to repair the valve. In addition, the licensee failed to identify in the action request/condition report that the valve was a safety-related component.

- Action Request/Condition Report 186820 described the discovery of two fuel oil leaks on the emergency diesel generator. The action request/condition report was assigned a "D" level and closed to actions taken. Subsequently the licensee initiated Action Request/Condition Report 187580 and found that corrective actions needed to be taken to prevent recurrence.

3. Assessment – Effectiveness of Corrective Action Program

Overall, the team concluded that the licensee generally developed appropriate corrective actions to addressed problems; however, the team identified 14 of 150 action request condition reports (9 percent) that had ineffective, untimely, or incomplete corrective actions. The team determined that the licensee was aware of a negative trend in implementation of corrective actions and was making progress in their efforts to address this trend. In response to the negative trend, in January of 2008, the licensee created a committee to review all closures of corrective actions from category "A" and "B" level action request/condition reports. As of September 2009, this committee continued to review closures. The team reviewed documents generated by the committee and determined that in January 2008, 25 percent of category A and B action request/condition reports were graded as unsatisfactory. As of August 2009, the committee documents showed that the licensee had reduced this number to 13 percent. While progress had been made, the team concluded that the efforts to improve have not yet been completely effective.

Examples of Ineffective Corrective Actions

- The team reviewed NCV 05000397/2007003-05 that documented a failure of the licensee to provide adequate compensatory measures to support an accurate declaration of a notice of unusual event or alert. The licensee implemented corrective actions requiring the control room to use United States Geological Survey website data following a seismic event. United States Geological Survey uses the Richter scale instead of local ground acceleration and was not compatible with the licensee's procedures.

- The team found several deficiencies in the root cause evaluation and in the implementation of corrective actions for the adverse trend of missed quality control hold points following identification in the refueling outage 18. The team concluded that the ineffective corrective actions contributed to further missed quality control hold points in refueling outage 19. (Action Request/Condition Report 204531)

- The team reviewed an inspection report that documented ineffective corrective actions to mitigate hydrogen build-up during fuel cask loading. The report details the ineffective corrective actions which lead to repeated hydrogen deflagrations. (NCV 05000397/2008007 and NCV 07200035/2008001)

- Inspection report 05000397/2005002 documented a noncited violation related to over-tightening of emergency core cooling system (ECCS) motor bearing lube oil drain plugs. Inspection report 05000397/2008004 identified a noncited violation for failure to incorporate acceptable torque limits into work instructions, causing additional failures of drain plugs. The licensee failed to implement adequate corrective actions to prevent over-torqueing of the drain plugs.

- The team reviewed a finding that documents a failure to implement adequate interim corrective actions to prevent electro-hydraulic control system filter plugging in the main turbine electro-hydraulic control system. (FIN 05000397/2009003-02)

Examples of Untimely Corrective Actions

- The team reviewed a noncited violation that documented untimely corrective actions to revise known deficiencies in a safety-related procedure to prevent possible ECCS piping voiding in an accident. (NCV 05000397/2008002-01)

- The team reviewed a noncited violation that documented a failure to correct degraded reactor building siding in a timely manner. Although the licensee had previously identified deficiencies in eight action request/condition reports over several years, the licensee failed to address the problems prior to a windstorm removing the siding off of the containment building. The licensee's failure to take appropriate corrective actions for a known deficiency resulted in a breach of secondary containment. (NCV 05000397/2008002-04)

- Since 1990, the licensee has on several occasions identified repetitive failures of the RCIC and ECCS keep fill pumps. As of September 2009, ECCS keep fill pump replacements were scheduled for refueling outage R20 in 2011. The replacement of the RCIC keep fill pump was not planned. (Section 4OA2.5.a)

- On April 7, 2007, the licensee experienced a small fire in electrical transformer E-TR-IN/2. The licensee determined the cause of this fire to be overheating due to the failure of the transformer to meet application requirements. While intending to replace this transformer with a more appropriate model, the licensee inadvertently installed the same inappropriate model. Inadequate effectiveness reviews following replacement resulted in the licensee's failure to identify the incorrect part until approximately 18 months after installation. The team determined that this was due to the licensee's deferral of scheduled monthly monitoring for 17 months. (Section 4OA7)

Examples of Incomplete Corrective Actions

- The team reviewed NRC Inspection Report 05000397/2008003 that evaluated Problem Evaluation Report 207-0459 that documented the licensee's evaluation of common cause diesel generator issues. The inspection report identified that the licensee had closed three corrective actions without adequate evaluation and without documentation to support closure. The issues involved: the failure to address a corrective action to increase the priority of replacing the governor for diesel generator 3; the failure to evaluate specific training for technicians and operators on the diesel generator insulation protection system; and, the failure to perform an evaluation of differences and design changes to the operation and control of the three diesel generators.

- The team identified an incomplete corrective action for an apparent cause evaluation that investigated problems securing loose material around the site. As a resolution to the evaluation, the licensee issued a corrective action which required plant personnel to change the risk management procedure to request engineering input when storing loose material. Instead, the procedure was changed to treat loose material as a high risk activity, not explicitly requiring engineering input. (Action Request/Condition Report 183628)

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The team examined the licensee's program for reviewing industry operating experience, including a review of the governing procedure and self-assessments. The team reviewed a sample size of approximately 100 of 1200 operating experience notifications that had been issued during the past 6 months. The team reviewed whether the licensee had appropriately evaluated the notifications for relevance to the facility. The team then examined whether the licensee had entered select items into their corrective action program and assigned appropriate actions to address the issues. The team reviewed a sample of root cause evaluations and corrective action documents to determine if 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 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 incorporated both internal and external operating experience into lessons-learned for training and pre-job briefs.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The team reviewed 16 licensee self-assessments and quality assurance audits to assess whether the licensee was regularly identifying performance trends and effectively addressing them. The team reviewed audit reports to assess the effectiveness of assessments in specific areas. The team evaluated the use of self- and third party assessments, the role of the quality assurance department, and the role of the performance improvement group related to licensee performance. The specific self-assessment documents reviewed are listed in the Attachment.

b. Assessment

The team concluded that the licensee had a thorough and self-critical self-assessment and audit process. Over the inspection period, the licensee produced a large number of self-assessments and detailed quality assurance reports, with 228 assessments and 22 quality assurance reports generated. The licensee used a multi-tiered self-assessment approach that applied a graded level of effort based on the subject and management attention. The licensee was effective in utilizing experts from outside the company, to help assess performance. Although the licensee was very self-critical and thorough in most of the reviewed assessments, the team concluded that the effectiveness of the assessments, especially for the assessments performed at the beginning of the inspection period, was diminished due to untimely implementation of recommendations, failure to identify formal recommendations, or failure to implement recommended improvements. The licensee identified these programmatic deficiencies early in the inspection period, and was addressed them by incorporating self-assessment recommendations directly into the corrective action program for tracking and timely resolution. The team concluded that the licensee's actions were effective.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The inspection team conducted four focus group sessions consisting of approximately 8 individuals each. The interviewees represented various functional organizations and ranged across contractor, staff, and supervisor levels. These sessions were designed to elicit a qualitative assessment of the degree to which the participants believed the licensee 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:

> 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.

The team also conducted individual interviews as part of their interaction with plant staff. In addition, the team reviewed the results of the licensee's 2009 Nuclear Safety Culture and Safety Conscious Work Environment Survey results.

b. Assessment

The team determined that the licensee maintained a safety-conscious work environment. Based upon the responses received during the focus group sessions and individual 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 (or directly to the individual associated with an industrial safety concern). Most employees indicated that they would use the chain of command or contact the NRC's resident inspectors if they felt that their concerns were not adequately addressed. None of the individuals could recall any occasions where an employee felt that he or she 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 the concern to their supervisor. They also mentioned that the condition reporting process was difficult to use and that not all individuals have access to the system.

The team noted that there may be challenges to maintaining a safety-conscious work environment at Columbia Generating Station, based upon the focus group discussions related to the other aspects of a safety-conscious work environment. Specifically, when questioned about priority and resolution of safety concerns, some individuals questioned whether management was firmly committed to resolving

safety concerns. While some of these beliefs may be based upon what was perceived as a lack of priority towards industrial safety issues, three failures associated with nuclear safety were identified. The focus groups indicated that management was aware of safety concerns associated with the following equipment prior to their failures:

- Corrosion in the service water pumps, eventually leading to the shafts decoupling from the impellers in 2005
- Installation flaws in the reactor building siding which lead to the failure of the siding during high winds in 2007
- Deficiencies in the 6.9 kV electrical non-segmented bus, leading to a fire in 2009

The information from the focus groups indicated that management had knowledge of the deficiencies, but chose not to take action. One individual believed that management usually committed the appropriate resources to resolve safety concerns, but that it was the responsibility of the individual with the concern to "make the case" as to why it was important or significant. The same perspective was reiterated two times during the focus groups and was noted by team members during interviews related to other inspection activities.

In regards to alternate methods of raising safety concerns, the team identified that there is no mechanism for initiating an action request/condition report anonymously. When questioned about the lack of ability to raise concerns anonymously, several individuals believed that the employee concerns program had boxes located throughout the facility where an individual could submit a concern anonymously on paper. However, when interviewed, the Employee Concerns Program manager admitted that those boxes had been removed some time ago due to a lack of use. The team noted that the individuals in two of the groups could not name the Employee Concerns Program manager and that there were few posters or flyers advertising the program. The licensee acknowledged the observations of a lack of ability to initiate an anonymous action request/condition report and initiated Action Request/Condition Report 203868 to determine whether changes to the process should be enacted. The Employee Concerns Program manager stated that he maintains an anonymous telephone and facsimile line in his office and submits an Energy Northwest News article on a quarterly basis as a method to increase the visibility of the program.

Finally, the team reviewed the results from the licensee's 2009 Nuclear Safety Culture and Safety Conscious Work Environment Survey. Overall, the report evaluated the environment as positive, concluding that the licensee "continues to have and maintains a strong nuclear safety culture and a safety-conscious work environment." The survey noted that there remained some concern for initiation of action request/condition reports, prioritization, and resolution effectiveness. The team noted that some of the write-in comments were similar to comments raised during focus group and individual interviews such as some individuals believed that the threshold for writing action request/condition reports was too low. The report recommended actions that included focus and consistency of message from

management, knowledge by employees of the importance of the condition reporting process including low-level issues, and tracking open action request/condition reports, among other recommendations. The team noted the response to one particular question in the survey could indicate a vulnerability to the corrective action process. Specifically, the survey stated, "In the past year, when I knew what needed to be done to correct a problem, I had a tendency to skip writing the CR and just fix the problem." Seventy-five percent of the respondents agreed or strongly agreed to the statement. While not questioned specifically during the focus group sessions regarding this tendency, a few individuals did provide indications that this may be a common practice. The team noted that failure to document issues within the condition reporting process could lead to the failure to address the underlying causes of deficiencies or could prevent adequate trending.

.5 Specific Issues Identified During This Inspection

a. Failure to Promptly Replace Keep Fill Pumps

Introduction. The team identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," which occurred when the licensee failed to promptly correct an identified condition adverse to quality. Specifically, in 1998, the licensee identified an inadequate design of the keep fill pumps for the RCIC system and ECCS that resulted in repetitive unexpected failures of the pumps. Corrective actions for this condition adverse to quality had been repeatedly deferred since the condition was originally identified; no effective corrective actions had been taken as of September 2009.

Description. Keep fill pumps are safety-related pumps which maintain the discharge legs of the ECCS and RCIC pumps free of voiding between the discharge check valve and the reactor pressure vessel. The four keep fill pumps for the discharge legs of the ECCS and RCIC system, HPCS-P-3, LPCS-P-2, RHR-P-3, and RCIC-P-3, were of identical design. In February 1998, after a premature failure of pump RHR-P-3, the licensee identified that the thrust bearings installed in these pumps were inappropriate for service conditions. The licensee had changed the bearing model twice previously: in 1990 after the original bearings went out of production and in 1995 when the first replacements experienced unexpected wear.

In January 1998, RHR-P-3 seized as a result of the failure of the pump's thrust bearing. The bearing, which had an expected life of 10 years, had been in service for less than 15 months at the time of the failure. Weekly vibration monitoring conducted during normal operation did not demonstrate any degradation to the bearing that had indicated imminent failure. The licensee initiated problem evaluation request 298-0006 to perform a root cause analysis of the pump RHR-P-3 thrust bearing failure. In the resolution to this evaluation, completed on February 2, 1998, the licensee identified that because the power frame for the pump was sized for several different pump casing sizes, and because the pumps installed at Columbia Generating Station were on the low capacity end of this size range, the resulting bearing loads during pump operation were light and below the minimum loads required for proper bearing operation. The licensee

determined the root cause of the bearing failure to be the failure of the vendor to analyze the bearings for minimum loading criteria during initial selection of the power frame. The cause evaluation recommended that an evaluation be performed to identify actions which could be taken to improve keep fill pump reliability.

In March 1998, the licensee initiated a periodic maintenance task to refurbish the four keep fill pumps annually. The refurbishment included rebuilding the power frames or installing a rebuilt power frame. During the three years following the implementation of this maintenance task, between March 1998 and May 2001, the four keep fill pumps collectively experienced eight failures. Seven of these eight failures occurred less than 12 months following the previous overhaul/rebuild of the pump. In May 2001, the licensee initiated Action Request/Condition Report 00001853 to document this condition.

In July 2001, the licensee issued a report entitled "ECCS/RCIC Keep Fill Pumps Reliability Improvement Measures." This report identified an adverse trend in keep fill pump performance and recommended replacing the four keep fill pumps with smaller models which would be more appropriately sized for their applications. These replacement tasks were documented as actions in Action Request/Condition Report 00001853. Between July 2001 and September 2009, the licensee repeatedly deferred or cancelled these actions. In December of 2007, the licensee cancelled the replacement/modification of the RCIC keep fill pump. As of September 2009, this Action Request/Condition Report contained open actions to schedule replacement of the three ECCS keep fill pumps for refueling outage R20 in 2011.

On August 6, 2008, the licensee again identified an adverse trend in ECCS keep fill pump performance. The licensee initiated Action Request/Condition Report 184668 to document this adverse trend and to initiate an apparent cause evaluation. On August 30, 2008, the licensee completed a common cause analysis for the "increasingly poor performance record" of ECCS keep fill pumps. The licensee identified the apparent cause of this poor performance record to be improper pump application. The corrective actions recommended by the report involved the replacement of the ECCS keep fill pumps with a new model, customized for its application. The RCIC keep fill pump was not addressed.

The team determined that the licensee's repeated cancellation and deferral of actions identified to correct repetitive failures of the keep fill pumps and its use of operating and maintenance work-arounds was not appropriate. The team noted that the licensee had multiple opportunities to correct the causes of the frequent pump failures, but failed to do so. As of September 2009, ECCS keep fill pump replacements were scheduled for refueling outage R20 in 2011. The replacement of the RCIC keep fill pump was not planned.

Analysis. The failure of the licensee to take timely actions to correct an inadequate design of safety-related equipment was a performance deficiency. This performance deficiency was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to

prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the team determined that this performance deficiency was of very low safety significance (Green) because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The team determined that this finding had a crosscutting aspect in the resources component of the human performance area because the licensee failed to ensure that resources were available to minimize long-standing equipment issues [H.2(a)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this requirement, from 1998 until present, the licensee failed to establish adequate measures to assure that a condition adverse to quality was corrected. Specifically, the licensee identified the need to replace the RCIC and ECCS keep fill pumps because they could fail repeatedly; however, the actions to replace the pumps improperly sized were repeatedly deferred and never implemented. Because this finding was determined to be of very low safety significance (Green) and was entered into the licensee's corrective action program as Action Request/Condition Report 204768, this violation is being treated as a noncited violation consistent with the NRC Enforcement Policy: NCV 05000397/2009008-01, "Failure to Promptly Replace Keep Fill Pumps."

b. Failure to Ensure Suitability of Class 1E Electrical Components

Introduction. A Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was revealed on April 7, 2007, when overheating of a Class 1E power conditioning transformer resulted in a fire. The licensee determined that the failed transformer, which had been installed as part of a July 2000 design change, was of an inappropriate design for its application.

Description. On April 7, 2007, the licensee experienced a small fire in electrical transformer E-TR-IN/2 that supplies backup power to the safety-related instrument bus. The licensee commenced repair activities to replace the damaged transformer on April 8. This event was entered into Energy Northwest's corrective action program as Action Request/Condition Report 00050268. The licensee determined the cause of the fire to be a failure of the transformer to meet the application requirements. This commercially-dedicated transformer was routinely operated in an energized, unloaded condition. The licensee determined that the manufacturer had provided inadequate information regarding the operating characteristics of the transformer which led to the transformer being inappropriately installed in its application following a 2000 design change. Specifically, the licensee noted that the design of the transformer was such that under a no-load condition, the capacitors on the output side of the transformer would experience heating beyond what had been analyzed by the vendor. In its root cause, the licensee noted several missed opportunities to identify this vulnerability based on operating experience.

The licensee initiated actions to obtain a suitable replacement transformer which could be run under no-load conditions for extended periods. In June 2007, the licensee replaced both the damaged transformer, E-TR-IN/2, and E-TR-IN/3, which performed the same function in the redundant train. Following replacement, the licensee failed to perform follow-up thermography to verify proper installation and operation; this is documented in this report as a licensee-identified violation in Section 4OA7 of this report.

Analysis. The failure of the licensee to ensure that commercially dedicated Class 1E power conditioning transformers were appropriate for their applications was a performance deficiency. This performance deficiency was more than minor because it was associated with the design control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the team determined that this performance deficiency was of very low safety significance (Green) because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The team determined that this performance deficiency did not have a crosscutting aspect because it was not indicative of current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, requires, in part, that measures be established for the selection and review for suitability of materials, parts, equipment, and processes that are essential to the safety-related functions of structures, systems, and components. Contrary to this requirement, in July 2000, the licensee failed to establish appropriate measures to ensure the suitability of application of parts that were essential to the safety-related function of the Class 1E electrical distribution system. Specifically, the licensee failed to ensure that a Class 1E power conditioning transformer was appropriate for the conditions under which it was normally operated. Because this finding was determined to be of very low safety significance (Green) and was entered into the licensee's corrective action program as Action Request/Condition Report 0204769, this violation is being treated as a noncited violation consistent with the NRC Enforcement Policy: NCV 05000397/2009008-03, "Failure to ensure suitability of Class 1E electrical components."

c. Failure to Follow Housekeeping Program Requirements

Introduction. The team identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to properly implement housekeeping procedures to control transient equipment and materials.

Description. On August 19, 2009, the team inspected several plant areas including the emergency diesel generator rooms, ECCS pump rooms and the control room, identifying

violations of the Columbia Generating Station's housekeeping procedure in each area. Specifically, the team identified loose maintenance carts in both the control room and emergency diesel generator rooms, a large metal ramp in the emergency diesel generator room and improperly stored ladders in all of the ECCS pump rooms.

The maintenance carts in the control room were chocked to prevent movement; however, the carts were stored on a metal grating that allowed the carts free sliding movement. The team noted safety-related conduits adjacent to the carts and informed the shift manager of the deficiency. Two weeks later, on September 2, 2009, the team again toured the main control room and noted that the maintenance carts were in the same location and had not been properly secured. After the team brought their concerns to station management, station personnel relocated the carts and the inspectors verified proper relocation of the carts. The team found the maintenance cart in the diesel generator room not chocked, contrary to the requirements, but it was not near safety-related equipment. The ladders in the ECCS pump rooms were found stored in wall holders without the required holding clamps secured. One of the ladders was stored a few inches from a sensitive safety-related equipment instrument rack. The licensee evaluated these conditions and found that although these items were in violation of the station housekeeping procedure, equipment operability had been maintained. The licensee either secured or removed the equipment and entered this issue into their corrective action program as Action Request/Condition Report 204514.

The team reviewed the licensee's corrective action program and 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 NRC or quality assurance inspectors, indicating that station personnel are not identifying housekeeping program deficiencies in the corrective action program at a low threshold. The team concluded that the multiple failures of plant personnel to follow the requirements to properly secure or to perform an engineering analysis of equipment in close proximity to sensitive equipment was indicative of a significant programmatic deficiency.

Analysis. The repeated failures of plant personnel to follow the procedural requirements of the housekeeping procedure were performance deficiencies. The finding was more than minor because if left uncorrected, the programmatic deficiency could lead to a more significant safety concern. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance 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. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program area component because the licensee failed to have a low threshold for identifying deficient housekeeping issues [P.1.a].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Procedure PPM 10.2.53, "Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks," Section 7.2.2 requires that transient equipment be secured or moved away from safety-related equipment if left unattended. Contrary to the above, on August 19, 2008, the team identified multiple examples of transient equipment located near safety-related equipment that was not secured or moved away from safety-related equipment. Because this finding was of very low safety significance and was entered into the licensee's corrective action program as Action Request/Condition Report 204514, this violation is being treated as an NCV, consistent with Section VI.A of the Enforcement Policy: NCV 05000397/2009008-05, "Failure to Follow Housekeeping Program Requirements."

4OA6 Meetings

Exit Meeting Summary

On September 17, 2009, the team presented the inspection results to Mr. W. Scott Oxenford, the Vice-President, Nuclear Generation, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 21, 2009, the team re-exited information telephonically to Mr. Greg Cullen, the Regulatory Programs Manager, regarding the team's conclusions on designation of crosscutting issues.

4OA7 Licensee-Identified Violations

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

Technical Specification 5.4.1.a requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Appendix A, Section 1.c, required, in part, that safety-related activities including equipment control should be covered by written procedures. Contrary to this requirement, on March 29, 2008, during the process of moving control rods for a sequence exchange, operators inserted a control rod into the core when the control rod pull sheets required the withdrawal of the control rod from the core. This finding was determined to have very low safety

significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This issue was entered into the licensee's corrective action program as Action Request/Condition Report 179386.

Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality, such as deviations and nonconformances are promptly identified and corrected. Contrary to this requirement, from April 2007 through January 2009, the licensee failed to establish measures to assure that a condition adverse to quality was promptly identified and corrected. Specifically, the licensee failed to identify that an incorrectly designed transformer subject to overheating and failure had been installed in the Class 1E power system and, following identification in January 2009, the licensee failed to promptly correct the condition adverse to quality. This performance deficiency was of very low safety significance (Green) because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This issue was entered into the licensee's corrective action program as Action Request/Condition Report 0204769.

ATTACHMENTS: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

Ackley, Steve	Maintenance Supervisor
Atkinson, Dale	VP Operational Support
Bekhazi, John	Plant General Manager
Blake, Mark	Operations Support Specialist
Borland, Inge	Corrective Action Program Supervisor
Breard, Daryl	Electrical Craft Supervisor
Brower, Jim	Design Engineering Supervisor
Brown , Dave	Operations Manager
Burke, William	Reactor Engineer, SNM Custodian
Clymer, David R.	Quality Services Supervisor
Cullen, Greg	Regulatory Programs Manager
Dallas, Steve	System Engineer
Davis, Michael	Radiological Services Manager
Engstrom, Edan	Operations Support Specialist
Erwin, Tom	Chemistry Manager
Frisco, Joe	Engineering General Manager
Gambhir, Sudesh	VP Technical Support
Haber, Kevin	Control Room Supervisor
Holle, Mike	Principle Engineer, FIN Team
Homer, Paul	Corrective Action Program Specialist
Huiatt,Tony	Principle Engineer, Licensing
Humphreys, Mike	Licensing Supervisor
Inserra, Paul	Performance Improvement Manager
Jenkins, Brad	Maintenance Manager
Kartchner, Steve	System Engineer
King, Carl	Assistant to the Plant General Manager
Latta, John	System Engineer
Mand, Daljit	Planning, Scheduling and Outage Manager
Martinez, Carla	Organizational Effectiveness Manager
Moon, Chip	Training Manager
Parmelee, Rob	System Engineering Manager
Peterman, Jocelyn	Maintenance Program Specialist
Pierce, Jack	Principle HP, Radiation Support
Prewett, Randall	Operations Support Manager
Ramey, Doug	Principle Engineer
Welch, Don	Quality Auditor
Ting, James	System Engineer
Torres, Alex	Corrective Action Program Lead
Torres, Roberto	Quality Manager
Swank, David	Engineering General Manager (acting)
Walton, Russell	Operations Support Specialist

Licensee Personnel (continued)

Wolfgramm, Rich	NSSS Engineering Supervisor

NRC Personnel

Cohen, Ron	Senior Resident Inspector
Hagar, Bob	Senior Project Engineer
Walker, Wayne	DRP Branch Chief
Werner, Greg	DRS Branch Chief

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000397/2009008-01 NCV	Failure to Promptly Replace Keep Fill Pumps
05000397/2009008-02 NCV	Failure to Ensure Suitability of Class 1E Electrical Components
05000397/2009008-03 NCV	Failure to Follow Housekeeping Program Requirements

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

NUMBER	TITLE	REVISION
SWP-CAP-01	Corrective Action Program	017
SWP-CAP-03	Operating Experience Program	006
SWP-CAP-06	Condition Review Group (CRG)	011.001
SWP-CAP-07	Trending Program	007
CDPM-01	Cause Determination Practitioners Manual	002
PPM 9.3.32	Fuel Integrity Monitoring	009
SWP-NFM-01	Nuclear Fuel Reliability	004
MWP-1	Maintenance Welding Operating Procedure	014
ABN-RHR-SDC-PRESS	Leakage into RHR SDC Suction Line	001
10.2.53	Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, Metal Storage Cabinets, and Temporary Shielding Racks	029
1.3.1	Operating Policies, Programs, and Practices	083
5.5.26	Overriding RHR Shutdown Cooling Return Valve Isolations	009
5.5.26	Overriding RHR Shutdown Cooling Return Valve Isolations	007
OI-56	Plant Monitoring Expectations for Reactivity Manipulations	003
SWP-IRP-03	Event Investigation	004
10.25.179	Flexible and Rigid Link Removal, Inspection and Installation	004.001
SWP-PRO-02	Preparation, Review, Approval, and Distribution of Procedures	020
1.10.1	Notifications and Reportable Events	031
SPES-1.7.2	Equipment Qualification Reviews	044
SPES-1.6.5	Commercial Grade Dedication	044
SWP-PUR-02	Procurement Technical Reviews	007
TI 4.22	Maintenance Rule Program	016
EQES-8	Environmental Qualification of Equipment Located in a Mild Environment	001
ABN-WIND	Tornado/High Winds	012
10.25.19	Termination and Splicing Instruction	022
11.2.13.1	Radiation and Contamination Surveys	023
11.2.24.2	Surveillance and Response for Changing Plant Conditions	001
HPI-0.19	Radiation Protection Standards and Expectations	009
1.3.66	Operability and Functionality Evaluation	012
DES-2-10	Design Engineering Instruction	007
OSP-CRD-M701	Surveillance Procedures - Reactivity Control Systems - Control Rod Exercise	010
PPM 1.3.76	Integrated Risk Management	016

DRAWINGS

NUMBER	TITLE	REVISION / DATE
E501-1	Electrical Symbol List: One Line & Elementary Diagrams: Power, Grounding, and Lighting Plans	022
E501-1	Electrical Symbol List: One Line & Elementary Diagrams: Power, Grounding, and Lighting Plans	023
E504	Vital One Line Diagram	053
E504	Vital One Line Diagram	054
EWD-46E-207A	Electrical Wiring Diagram: AC Electrical Distribution Systems: E-IN-2A and E-IN-2B	000
EWD-46E-207A	Electrical Wiring Diagram: AC Electrical Distribution Systems: E-IN-2A and E-IN-2B	001
EWD-46E-208A	Electrical Wiring Diagram: AC Electrical Distribution Systems: E-IN-3A and E-IN-3B	000
EWD-46E-208A	Electrical Wiring Diagram: AC Electrical Distribution Systems: E-IN-3A and E-IN-3B	001
EWD-46E-316	Electrical Wiring Diagram: AC Electrical Distribution Systems: Power Panel E-PP-7A	008
EWD-46E-316	Electrical Wiring Diagram: AC Electrical Distribution Systems: Power Panel E-PP-7A	009
EWD-46E-317	Electrical Wiring Diagram: AC Electrical Distribution Systems: Power Panel E-PP-8A	006
EWD-46E-317	Electrical Wiring Diagram: AC Electrical Distribution Systems: Power Panel E-PP-8A	007
ANF-306305	Rod Storage Basket 24 Position	003

CALCULATIONS

NUMBER	TITLE	REVISION
E-7893-011-2	Canister Seismic Calculation	000
E-7893-011-2	Canister Heat Load	000
EQ-02-92-10		000
EQ-02-92-013		000

ACTION REQUEST/CONDITION REPORTS

1853	50896	54725	132941	180212	185914	194193	197879
6383	51318	55043	176197	180719	186138	194222	197900
9766	51539	55339	176344	181126	186288	194334	197948
13785	51541	55828	176497	181458	186665	194673	198094
16962	51941	55970	176649	181679	187580	194706	198262
18351	52084	56070	176659	181780	187808	195246	198691
35297	52149	56086	176887	183345	187910	195483	198957
37953	52168	56087	176909	183386	188809	195495	199245

ACTION REQUEST/CONDITION REPORTS

40206	52195	56286	176945	183551	189691	195825	200324
40271	52339	56418	177119	183556	189855	195826	201111
42094	52492	56813	177262	183628	190324	196047	201509
43166	52530	56880	177711	183667	190325	196206	202806
44669	52701	57090	178114	183686	190360	196960	202890
50268	52950	57186	178189	184027	190759	197052	103071
50268	53428	57213	178214	184135	191022	197078	203100
50321	53697	57437	179094	184564	191057	197105	204531
50368	53755	57439	179386	184668	191601	197142	2-07-03186
50483	54220	57660	179672	184756	192078	197341	2-07-07590
50816	54409	57707	179763	184886	192081	197387	
50819	54457	57730	179793	185023	193000	197408	
50820	54460	60444	179810	185620	193537	197857	

WORK ORDERS

001853	050819	055043	176197	179094	184027	190360	197408
006383	051941	055339	176344	179386	184135	190759	197857
009766	052084	055970	176497	179793	184564	191022	197900

SELF-ASSESSMENTS AND QUALITY ASSURANCE REPORTS

NUMBER	TITLE
AR-SA 188750	NRC PI&R Inspection Pre-Assessment
SA-2006-006	Pre-Outage Effectiveness Review With Assistance
SA-2006-0136	Self Assessment regarding INPO 05-005 Topic - Problem Reporting
AR-SA 72978	Assess the Trend Closure Effectiveness
SA-2006-0139	Problem Analysis, Action Planning, Management Review And Approval
AR-SA 189446	OE Self Assessment
AR-SA 175245	Assessment of Apparent Cause Evaluations
SA-2007-0028	R18 Outage Readiness Self Assessment
SA-2007-0069	Performance of Supplemental Personnel
SA-2007-0117	Reactivity Management 2-19-2008
SA-2007-0139	Effectiveness Evaluation Of Apparent Cause Training
AR-SA 175245	Assessment of Apparent Cause Evaluations
SA-2006-0630	Self Assessment Program Effectiveness
SA-2008-0043	Chemistry Assessment
56070-12	Effectiveness Review of Corrective Actions For Action Request/Condition Report 56070
AU-CA-07	Quality Services Audit Report - Corrective Action Program

ENGINEERING EVALUATIONS

Engineering Change EC-8195, Jet Pump Wedge Condition Evaluation
Engineering Change EC-8213, Loose Parts Evaluation
Engineering Change EC-6348
5059-05-0004, “Allow increased heat loads in the fuel pool and the use of administrative controls to ensure pool temperature limits are met,” Revision 0
PER 292-0472
PER 298-0006
PER 299-1341
PER 203-4157
PER 207-0132
PER 207-0160
PER 207-0163
PER 207-0174
PER 207-0259

MISCELLANEOUS DOCUMENTS

SOLA HD Vendor Manual: “MCR Hardwired Series – Power Line Conditioning with Voltage Regulation,” undated
Procurement Requirements Evaluation 5823
Receipt Inspection Plan 972, Revision 02
Basic Design Change 89-0234-0A
Basic Design Change 0000000394
CCER C00-0003, Revision 00
CCER C90-0026, Revision 04
CCER C90-0024, Revision 04
CCER C90-0023, Revision 8
EQP-89-03, Revision 0
Interoffice Memo: “Failure Analysis of DEH-EOH-164B,” dated 9/12/2007
Interoffice Memo EN2-PE-01-0025, “ECCS/RCIC Keep Fill Pumps Reliability Improvement Measures,” dated 7/13/2001
Receipt Inspection Plan 972, Revision 01
Receipt Inspection Plan 972, Revision 00
Procurement Requirements Evaluation 5823
Plant Internal Events Probabilistic Safety Assessment, Rev. 5.0
Work Order Instruction Template – QC Holdpoints
Documentation of Information Sharing - Health Physics Technicians #2009-008
Health Physics Standing Order 08-02

Information Request – June 3, 2008
Columbia Generating Station (CGS) PI&R Inspection, IP 71152
Inspection Report 05000397/2009008

I. Complete copies of all condition reports and associated documents related to significant conditions adverse to quality that were opened or closed during the period

II. Summary list of all condition reports related to conditions adverse to quality that were opened or closed during the period

III. Summary lists of all condition reports which were up-graded or down-graded during the period

IV. A list of all corrective action documents that subsume or "roll up" one or more smaller issues for the period

V. Summary lists of operator workarounds, engineering review requests and/or operability evaluations, temporary modifications, and control room and safety system deficiencies opened or closed during the period

VI. List of all root cause analyses completed during the period

VII. List of root cause analyses planned, but not complete at the end of the period

VIII. List of plant safety issues raised or addressed by the employee concerns program

IX. List of action items generated or addressed by the plant safety review committees during the period

X. All quality assurance audits and surveillances of corrective actions completed during the period

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

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

XIII. Governing procedures/policies/guidelines for:

A. Corrective action program/condition reports
B. Apparent and root cause evaluation/determinations
C. Employee concerns program
D. Temporary modifications
E. Operating experience evaluation
F. Work requests
G. Operator workarounds

H. Safety culture policy/procedures

XIV. A listing of all external events evaluated for applicability at CGS during the period

XV. Condition reports or other actions generated during the period for each of the items below:

A. Part 21 reports
B. NRC Information Notices, Bulletins, and Generic Letters
C. LERs issued by CGS
D. Vendor Safety Information Letters or Equivalent
E. NCVs and Violations issued to CGS

XVI. Security event logs and security incidents during the period, that are not considered SGI. Safeguards information will be reviewed by the team when onsite.

XVII. Radiation protection event logs during the period

XVIII. Condition reports generated as a result of emergency planning drills and tabletop exercises during the period

XIX. Current system health reports or similar information during the period

XX. Condition reports associated with maintenance preventable functional failures during the period

XXI. Condition reports associated with adverse trends

XXII. Corrective action effectiveness review reports generated during the period

XXIII. Corrective Action documents should include detailed documentation of the issue, resolution, corrective actions, and final disposition as applicable

XXIV. List of emergency plan exercise and drill deficiencies during the period

XXV. Quality assurance audit reports during the period

XXVI. Copies of corrective action documents associated with the onsite and offsite safety committee action items provided

XXVII. Employee Concern Program Files/ Reports. This needs to be a summary list only and will only be reviewed by the team while onsite. Do not transmit electronically or by mail.

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

XXIX. Detailed evaluations of Vendor “Safety Information Letters” or Equivalent

XXX. List of degraded and nonconforming conditions under Part 9900 (RIS 2005-20), which were not corrected in the last outage and the basis for not correcting

XXXI. Summary lists of documentation related specifically to the emergency diesel generator system for the past five years. This includes the following:

A. Condition reports
B. Corrective maintenance and troubleshooting work orders
C. Design modifications (completed, in-progress, or considered)