



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BLVD  
ARLINGTON, TEXAS 76011-4511

July 25, 2013

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 INTEGRATED INSPECTION  
REPORT 05000397/2013003

Dear Mr. Reddemann:

On June 22, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Columbia Generating Station. The enclosed inspection report documents the inspection results which were discussed on June 24, 2013, with Mr. W. Hettel, Vice President, Operations, and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Two NRC identified findings of very low safety significance (Green) were identified during this inspection. Both of these findings were determined to involve violations of NRC requirements. Additionally, the NRC has determined that a traditional enforcement Severity Level IV violation occurred. This traditional enforcement violation was identified without an associated finding. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest these non-cited 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, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Columbia Generating Station.

If you disagree with a cross-cutting aspect assignment 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 Publicly Available Records (PARS) component of

M.E. Reddemann

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NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Wayne C. Walker, Branch Chief  
Project Branch A  
Division of Reactor Projects

Docket No.: 05000397  
License No.: NPF-21

Enclosure: Inspection Report 05000397/2013003  
w/ Attachments: Supplemental Information

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/RA/E-Walker	/RA/E-Walker	/RA/	/RA/	/RA/	/RA/
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000397  
License: NPF-21  
Report: 05000397/2013003  
Licensee: Energy Northwest  
Facility: Columbia Generating Station  
Location: Richland, WA  
Dates: March 24, 2013 through June 22, 2013  
Inspectors: J. Groom, Senior Resident Inspector  
M. Hayes, Resident Inspector  
I. Anchondo, Senior Reactor Inspector  
L. Carson II, Senior Health Physicist  
J. O'Donnell, Health Physicist  
W. Sifre, Senior Reactor Inspector  
J. Laughlin, Emergency Preparedness Inspector, NSIR  
G. Skaggs-Ryan, Reactor Inspector, NSPDP  
Approved By: Wayne Walker, Chief, Project Branch A  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000397/2013003; 03/24/2013 – 06/22/2013; Columbia Generating Station, Integrated Resident and Regional Report; Operability Evaluations and Functionality Assessments, Problem Identification and Resolution.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. The NRC identified two findings of very low safety significance (Green) during this inspection period. Both of these findings involved violations of NRC requirements. Additionally, the NRC identified one traditional enforcement Severity Level IV violation without an associated finding. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." 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.

### A. **NRC-Identified Findings and Self-Revealing Findings**

Cornerstone: Miscellaneous

- **Severity Level IV.** The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59, "Changes, Tests, and Experiments," because the licensee failed to obtain a license amendment, pursuant to 10 CFR 50.90, prior to implementing a change to piping classification of the reactor water cleanup system. Specifically, through a 1995 revision to the Final Safety Analysis Report, the licensee changed the classification of reactor water cleanup system piping from ASME Section III, Class 3, to ANSI B31.1 without first obtaining NRC approval. The licensee initiated Action Request AR 282022 to address the incorrect downgrading of piping in the reactor water cleanup system.

The violation was evaluated using Section 2.2.4 of the NRC Enforcement Policy because the violation could impact the ability of the NRC to perform its regulatory oversight functions. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined the finding was of very low safety significance because the finding did not result in exceeding the reactor coolant system leak rate for a small break loss of coolant accident and because the finding did not affect other systems used to mitigate a loss of coolant accident resulting in a total loss of function. Therefore, in accordance with Section 6.1.d of the NRC Enforcement Policy, the significance was determined to be Severity Level IV. This issue was entered into the licensee's corrective action program as Action Request AR 282022. This violation did not have a cross-cutting aspect because it was strictly associated with a traditional enforcement violation (Section 1R15).

Cornerstone: Barrier Integrity

- Green. The inspectors identified two examples of a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow the corrective action program procedure by promptly entering conditions adverse to quality into the corrective action program. The first example occurred on March 16, 2013, when the reactor building exhaust air experienced a step reduction in flow due to a stack access door being inadvertently left open. The step change in reactor building exhaust air was not entered into the corrective action program until March 26, 2013. The second example occurred on May 20, 2013, during licensee inspections of reactor vessel internal components. During these licensee inspections, ultrasonic examinations identified cracking on the weld of the core shroud. The inspectors reviewed these inspections on June 3, 2013, and found that no condition reports had been initiated for the identified cracks. Procedurally, station personnel are required to initiate an action request condition report for any actual or suspected conditions adverse to quality no later than the end of shift. Following discussion with the inspectors, engineering personnel initiated action requests to address the indications found on core shroud welds. The licensee initiated Action Requests AR 286688 and AR 287423 to address the timeliness issues involving condition report initiation.

The performance deficiency was more than minor, because if left uncorrected, the failure to follow procedures associated with the corrective action program could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) For Findings At-Power," the inspectors determined that the finding was associated with the Barrier Integrity cornerstone and was of very low safety significance because (1) the finding did not involve reactor coolant system pressurized thermal shock issues; (2) the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system or heat removal components; (3) the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment; and (4) the finding represented a degradation of the standby gas treatment system only in its radiological barrier function for secondary containment. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component, in that, the licensee failed to implement their program at a sufficiently low threshold. Consequently, the licensee failed to ensure the timely entry of conditions adverse to quality into the corrective action program as required by station procedures [P.1(a)] (Section 4OA2).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," associated with the licensee's failure to follow station procedure PPM 1.3.57, "Barrier Impairments", Revision 29. On March 29, 2013, the inspectors walked down the main control room and noted that damper WEA-AD-51 had failed to move from

an intermediate to its closed position. A review by the inspectors revealed that the licensee failed to enter the appropriate technical specification action statements as required by PPM 1.3.57 for the failed damper. Based on questions posed by the inspectors, the licensee took action to close and gag shut damper WEA-AD-51 on March 29, 2013. The licensee entered this issue into their corrective action program as Action Request AR 288508.

The performance deficiency was more than minor because it affected the configuration control attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed an initial screening of the finding in accordance with Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding to be of very low safety significance because it only represented a degradation of the radiological barrier function provided for the control room. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance associated with the resources component because the licensee failed to maintain complete, accurate and up-to-date design documentation. Specifically, Technical Memorandum TM-2082, "Control Room Envelope Boundary Control," Revision 5, contained out of date design information which caused station operators to not consider procedure PPM 1.3.57 applicable to damper WEA-AD-51 [H.2(c)] (Section 4OA2).

**B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### Summary of Plant Status

The plant began the inspection period at 100 percent power. On May 11, 2013, the plant shutdown for refueling outage R-21. The plant remained in refueling outage R-21 for the remainder of the inspection period.

#### 1. REACTOR SAFETY

##### Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Summer Readiness for Offsite and Alternate-ac Power

##### a. Inspection Scope

The inspectors performed a review of preparations for summer weather for selected systems, including conditions that could lead to loss-of-offsite power and conditions that could result from high temperatures. The inspectors reviewed the procedures affecting these areas and the communications protocols between the transmission system operator and the plant to verify that the appropriate information was being exchanged when issues arose that could affect the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the transmission system operator and the plant's operations personnel during off-normal or emergency events
- The explanations for the events
- The estimates of when the offsite power system would be returned to a normal state
- The notifications from the transmission system operator to the plant when the offsite power system was returned to normal

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Final Safety Analysis Report (FSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:



- Startup and backup transformers E-TR-S and E-TR-B
- Division 1 and 2 emergency diesel generators
- Division 1 and 2 switchgear room coolers WMA-AH-53A and WMA-AH-53B

These activities constitute completion of one sample of readiness for summer weather affect on offsite and alternate-ac power sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since high winds were forecast in the vicinity of the facility for April 11, 2013, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. The inspectors walked down the transformer yard and the standby service water ponds because their safety-related functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the FSAR and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee-identified adverse weather issues at an appropriate threshold and disposition them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample of readiness for impending adverse weather conditions, as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

## **1R04 Equipment Alignment (71111.04)**

### **.1 Partial Walkdown**

#### **a. Inspection Scope**

The inspectors performed partial system walkdowns of the following risk-significant systems:

- April 9-10, 2013, standby gas treatment system train A
- April 15-16, 2013, service water system train A during planned work on residual heat removal train B
- June 4-5, 2013, reactor recirculation system, including areas inside of primary containment

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, FSAR, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

#### **b. Findings**

No findings were identified.

### **.2 Complete Walkdown**

#### **a. Inspection Scope**

On June 11-14, 2013, the inspectors performed a complete system alignment inspection of the shutdown cooling system including the instrumentation and logic for the Level 3

shutdown cooling primary containment isolation valves to verify the functional capability of the system. The inspectors selected the system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

**1R05 Fire Protection (71111.05)**

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- May 20, 2013, Fire Area TG-1, turbine building 501' elevation during hotwork
- June 6, 2013, Fire Area R-1, reactor building 471' elevation
- June 11, 2013, Fire Area M-27, electrical instrument rack E-IR-H22/P027 enclosure
- June 14, 2013, Fire Area R-7, residual heat removal train C pump room

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later

additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05AQ-05.

b. Findings

No findings were identified.

**1R07 Heat Sink Performance (71111.07)**

.1 Triennial Review

a. Inspection Scope

The inspectors reviewed licensee programs to verify heat exchanger performance and operability for the following heat exchangers:

- Standby service water pump house cooler 1A
- Fuel pool cooling heat exchanger 1A
- Diesel generator B, DCW 1B1, 1B2
- High pressure core spray diesel generator (Div. 3), DCW 1C

The inspectors verified whether testing, inspection, maintenance, and chemistry control programs are adequate to ensure proper heat transfer. The inspectors verified that the periodic testing and monitoring methods, as outlined in commitments to NRC Generic Letter 89-13, utilized proper industry heat exchanger guidance. Additionally, the inspectors verified that the licensee's chemistry program ensured that biological fouling was properly controlled between tests. The inspectors reviewed previous maintenance records of the heat exchangers to verify that the licensee's heat exchanger inspections adequately addressed structural integrity and cleanliness of their tubes. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four triennial heat sink inspection samples as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

**1R08 Inservice Inspection Activities (71111.08)**

Completion of Sections .1 and .5, below, constitutes completion of one sample as defined in Inspection Procedure 71111.08-05.

.1 Inspection Activities Other Than Steam Generator Tube Inspection, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, and Boric Acid Corrosion Control (71111.08-02.01)

a. Inspection Scope

The inspectors observed eight nondestructive examination activities and reviewed four nondestructive examination activities that included four types of examinations. The licensee did not identify any relevant indications accepted for continued service during the nondestructive examinations.

The inspectors directly observed the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Vessel Head	Weld DM – Top Head Meridional (Report: R-R21-013)	Ultrasonic
Reactor Vessel Head	Weld DK – Top Head Meridional (Report: R-R21-012)	Ultrasonic
Main Steam	Support MS-121 Dual Spring Can (Report: 3HV-282)	Visual (VT-3)
Main Steam	Support MS-96 Dual Snubber (Report: 3HV-286)	Visual (VT-3)
Main Steam	Support MS-98 Dual Strut (Report: 3HV-288)	Visual (VT-3)
Main Steam	Support MS-97 Dual Spring Can (Report: 3HV-287)	Visual (VT-3)
Main Steam	Support MS-171 Dual Spring Can (Report: 3HV-283)	Visual (VT-3)
Main Steam	Support MS-997N Dual Strut (Report: 3HV-289)	Visual (VT-3)

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Residual Heat Removal	Weld FW-16 pipe to elbow (Report: 5-13-4-25)	Penetrant (PT)
Residual Heat Removal	Weld FW-25, pipe to valve (Report: 5-13-4-25)	Penetrant (PT)
Residual Heat Removal	Weld FW-10, 3/4" dissimilar butt weld (Report: 1-13-10-1)	Penetrant (PT)
Residual Heat Removal	Weld FW-10, 3/4" dissimilar butt weld (Weld Record: 2-11727)	Radiographic (RT)

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspectors also verified the qualifications of all nondestructive examination technicians performing the inspections were current.

The inspectors observed two welds on pressure retaining risk significant systems.

The inspectors directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELD TYPE</u>
Residual Heat Removal	Weld FW-16, pipe to elbow (Weld Record: 2-11726)	Gas Tungsten Arc Welding (GTAW)
Residual Heat Removal	Weld FW-25, pipe to valve (Weld Record: 2-11726)	Gas Tungsten Arc Welding (GTAW)

The inspectors verified that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also verified that essential variables were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.01.

b. Findings

No findings were identified.

.2 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection scope

The inspectors reviewed 17 condition reports associated with inservice inspection activities, and determined that the corrective actions taken were appropriate. The inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection issues into the corrective action program, and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying inservice inspection industry operating experience. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

No findings were identified.

**1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)**

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On April 25, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during training. The inspectors assessed the following areas:

- Licensed operator performance
- The quality of the training provided
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques

These activities constitute completion of one quarterly licensed operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On March 31, 2013, and May 28, 2013, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity. The inspectors observed the operators' performance of the following activities:

- March 31, 2013, operator response following discovery of a leak in reactor water cleanup system.
- May 28, 2013, troubleshooting diesel generator 1 failure to stop following post maintenance testing and rod position indicating card replacement.

In addition, the inspectors assessed the operators' adherence to plant procedures, including OI-9, "Operations Standards and Expectation," Revision 58, and other operations department policies.

These activities constitute completion of one quarterly licensed-operator performance sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

**1R12 Maintenance Effectiveness (71111.12)**

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- June 18, 2013, high pressure core spray, low pressure core spray, residual heat removal A, and residual heat removal C following identification of voiding in suction and discharge piping
- June 21, 2013, standby gas treatment system

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring



- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee risk evaluations and the management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- April 9, 2013, Yellow risk during planned work on residual heat removal motor operator RHR-MO-6A and electrical power panel E-PP-7AAA
- April 15, 2013, Yellow risk during planned flushes of residual heat removal fuel pool cooling assist line
- May 4, 2013, Yellow risk during planned residual heat removal B pump replacement
- June 3, 2013, Yellow risk during planned fuel movements and potential risk due to divisional equipment swap
- June 10, 2013, Yellow risk during planned replacement of relief valve RHR-RV-5

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified

that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

**1R15 Operability Evaluations and Functionality Assessments (71111.15)**

a. Inspection Scope

The inspectors reviewed the following assessments:

- April 1, 2013, Action Request AR 281780 documenting a through-wall leak on reactor water cleanup heat exchanger RWCU-HX-1A
- April 23, 2013, Action Request AR 283081 documenting control room emergency chiller CCH-CR-1A inoperability with opposite train emergency diesel generator out of service for planned maintenance
- May 8, 2013, Action Request AR 284127 documenting a void in residual heat removal pump 2B suction following fill and vent
- May 23, 2013, Action Request AR 285261 documenting degraded residual heat removal heat exchanger RHR-HX-1A divider plate

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and FSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as

intended and were properly controlled. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

Introduction. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59, "Changes, Tests, and Experiments," because the licensee failed to obtain a license amendment, pursuant to 10 CFR 50.90, prior to implementing a change to piping classification for the reactor water cleanup system. Specifically, through a 1995 revision to the FSAR, the licensee changed the classification of reactor water cleanup system piping from ASME Section III, Class 3, to ANSI B31.1 without first obtaining NRC approval.

Description. On March 31, 2013, the licensee identified a thru wall leak on the shell side piping located between reactor water cleanup heat exchangers 1A and 1B and initiated Action Request 281780 to document the leak. On April 1, 2013, operations personnel removed the reactor water cleanup system from service to facilitate evaluation of the flaw and subsequent repair. The licensee performed ultrasonic testing and discovered a through-wall flaw approximately 0.15 inches in diameter located on a 4 inch diameter Schedule 80 elbow on the outlet of reactor water cleanup heat exchanger 1A. The ultrasonic examination also identified a 3 inch by 1 inch area around the weld edge that was below required minimum wall thickness. The licensee's proposed repair plan was documented in Engineering Change Minor Alteration EC MALT 11827 and consisted of a welded patch over the thinned area of piping. This repair was consistent with allowed repair methodologies in ANSI B31.1, "ANSI Standard Code for Pressure Piping, Power Piping" and was completed on April 5, 2013.

Prior to restoring the reactor water cleanup system to service, the inspectors reviewed EC MALT 11827, including the piping classifications specified in the licensing basis. The inspectors noted that the current revision of FSAR Section 1.8, "Conformance to NRC Regulatory Guides," specified the reactor water reactor water cleanup system piping between the containment isolation valves was Quality Group D as specified in Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants," Revision 3. Quality Group D components are to be constructed and maintained per the requirements of ANSI B31.1. However, the inspectors noted that the FSAR, Revision 33, which was in effect when the full power operating license was issued, stated that the original piping design was for Quality Group C as specified in Regulatory Guide 1.26. Quality Group C components are to be constructed and maintained per the requirements of ASME Section III, Class 3.

The inspectors reviewed Basis Design Change BDC 55-2927-OA and associated 10 CFR 50.59 Safety Evaluations 95-040 dated April 1995, and revision 1, 95-040-1 dated October 1998, both of which documented the downgrading of the non-safety related piping in the reactor water cleanup system from Quality Group C to Quality Group D. Both versions of the licensee's safety evaluation determined that the proposed change did not constitute an unresolved safety question and consequently did not require NRC approval prior to implementation. However, the inspectors determined that the piping could cause a high energy line break or a loss of coolant accident as evaluated in the FSAR, therefore the downgrading of the non-safety related piping from Quality Group C to Quality Group D standards did require NRC approval.

The licensee reviewed the inspectors' concerns and determined that the non-safety related piping in the reactor water cleanup system that was downgraded under BDC 55-2927-OA should be considered Quality Group C components and that the piping should be constructed and maintained per the requirements of ASME Section III, Class 3. On April 5, 2013, Columbia Generating Station requested approval from the NRC for the use of a temporary non-code repair of ASME Class 3 piping to prevent a reactor shutdown until the startup of the next scheduled Refueling Outage R-21 (ADAMS Accession number ML13108A218). The NRC approved the licensee's request to use a temporary non-code repair on April 6, 2013. The licensee initiated Action Request AR 282022 to address the incorrect downgrading of piping in the reactor water cleanup system.

Analysis. The violation was evaluated using Section 2.2.4 of the NRC Enforcement Policy because the violation could have impacted the ability of the NRC to perform its regulatory oversight functions. In accordance with the NRC Enforcement Policy, the significance determination process was used to inform the significance of the failure to obtain a license amendment prior to implementing a proposed change to reactor water cleanup system piping classification. Using Inspection Manual Chapter 0609, Appendix A, The Significance Determination Process for Findings At-Power, the inspectors determined the finding was of very low safety significance because the finding did not result in exceeding the reactor coolant system leak rate for a small break loss of coolant accident and because the finding did not affect other systems used to mitigate a loss of coolant accident resulting in a total loss of function. Therefore, in accordance with Section 6.1.d of the NRC Enforcement Policy, the significance was determined to be at Severity Level IV, since the impact of the incorrect changes was evaluated as having very low safety significance by the significance determination process. This issue was entered into the licensee's corrective action program as Action Request AR 282022. This violation did not have a cross-cutting aspect because it was strictly associated with a traditional enforcement violation.

Enforcement. Title 10 CFR 50.59(c)(2), "Changes, Tests and Experiments", (1995 and 1998 Revisions), required, in part, that a licensee who desires to make a change in the facility or the procedures described in the safety analysis report which involve an unreviewed safety question shall submit an application for amendment of his license pursuant to § 50.90. Title 10 CFR 50.59(a)(2) states, in part, that a proposed change, test, or experiment shall be deemed to involve an unreviewed safety question if the

probability of occurrence of an accident previously evaluated in the safety analysis report may be increased. Contrary to the above, on April 21, 1995, and October 22, 1998, the licensee implemented a change to the facility as described in the safety analysis report which involved an unreviewed safety question without first submitting an application for a license amendment pursuant to § 50.90. Specifically, changes to the FSAR documented in Safety Evaluations 95-040 and 95-040-1 approved the downgrading of the non-safety related piping in the reactor water cleanup system from Quality Group C to Quality Group D standards. The reduced quality standards resulted in an increase in the probability of occurrence of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report. This violation is being treated as a non-cited violation (NCV), consistent with section 2.3.2.a of the Enforcement policy. The violation was entered into the licensee's corrective action program as Action Request AR 282022. (NCV 05000397/2013003-01, "Failure to Obtain NRC Approval for Changes to Reactor Water Cleanup System Piping.")

#### **1R18 Plant Modifications (71111.18)**

##### **a. Inspection Scope**

The inspectors reviewed key affected parameters associated with energy needs, materials, replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the modification listed below.

- Engineering Change 1497, low pressure core spray system keep-fill pump replacement
- Engineering Change 10506, diesel generator 3 governor speed control replacement

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; post-modification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two samples for plant modifications as defined in Inspection Procedure 71111.18-05.

##### **b. Findings**

No findings were identified.

## 1R19 Post-Maintenance Testing (71111.19)

### a. Inspection Scope

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- May 8, 2013, residual heat removal pump B following planned pump replacement
- May 23, 2013 low pressure core spray valve LPCS-V-5 following motor operator rebuild
- May 24, 2013, service water valve SW-V-2A following planned maintenance
- May 28, 2013, diesel generator 1 following planned governor actuator replacement
- May 28, 2013, residual heat removal valve RHR-V-27A following motor operator rebuild
- June 6, 2013, containment supply purge air operator CSP-AO-4 following refurbishment
- June 18, 2013, reactor feedwater valves RFW-V-10A/B following refurbishment

The inspectors selected these activities based upon the structure, system, or components ability to affect risk. The inspectors evaluated these activities for the following:

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the FSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of seven post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

**1R20 Refueling and Other Outage Activities (71111.20)**

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for Refueling Outage R-21, conducted May 10 through June 22, 2013, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Maintenance of secondary containment as required by the technical specifications.

- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage.
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing.
- Licensee identification and resolution of problems related to refueling outage activities.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors reviewed the FSAR, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability



- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- May 21, 2013, Procedure ESP-B21-F101, "60 Month Battery Testing of 250 VDC E-B2-1," Revision 11
- May 28, 2013, Procedure OSP-RHR/IST-Q702, "Residual Heat Removal A Operability Test," Revision 40
- May 29, 2013, Procedures TSP-DG1/LOP-B501, "Standby Diesel Generator DG1 Loss of Power Test" Revision 18 and TSP-DG1/LOCA-B501, "Standby Diesel Generator DG 1 LOCA Test," Revision 21
- June 10, 2013, Local leak rate testing of containment penetrations X-17A and X-17B performed under Procedures TSP-RFW/X17A-R801, "LLRT of RFW-V-10A and RFW-V-32A," Revision 6 and TSP-RFW/X17B-R801, "LLRT of RFW-V-10B and RFW-V-32B," Revision 6
- June 19, 2013, Procedure TSP-RB-B501, "Reactor Building (Secondary Containment) Drawdown/Leakage Functional Test," Revision 8

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

## Cornerstone: Emergency Preparedness

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

#### a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession number ML123560215 as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-02.

#### b. Findings

No findings were identified.

### 1EP6 Drill Evaluation (71114.06)

#### a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on April 30, 2013, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center and the emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

#### b. Findings

No findings were identified.

## 2. RADIATION SAFETY

### Cornerstones: Public Radiation Safety and Occupational Radiation Safety

#### 2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

##### a. Inspection Scope

This area was inspected to: (1) review and assess the licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures, (2) verify the licensee is properly identifying and reporting Occupational Radiation Safety Cornerstone performance indicators, and (3) identify those performance deficiencies that were reportable as a performance indicator and which may have represented a substantial potential for overexposure of the worker.

The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements, and reviewed the following items:

- Performance indicator events and associated documentation reported by the licensee in the Occupational Radiation Safety Cornerstone
- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability
- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne radioactivity monitoring; controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements
- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.01-05.

b. Findings

No findings were identified.

**2RS02 Occupational ALARA Planning and Controls (71124.02)**

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/post-job reviews, exposure estimates, and exposure mitigation requirements
- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.02-05.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

**40A1 Performance Indicator Verification (71151)**

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the first quarter 2013 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Safety System Functional Failures (MS05)

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator for the period from the second quarter 2012 through the first quarter 2013. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and NRC integrated inspection reports for the period of April 2012 through March 2013, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the

performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one safety system functional failures sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the second quarter 2012 through the first quarter 2013. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of April 2012 through March 2013, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system specific activity sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the second quarter 2012 through the first quarter 2013. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of April 2012 through March 2013, to validate the accuracy of the submittals. The

inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system leakage sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the second quarter 2012 through the first quarter 2013. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed corrective action program records associated with high radiation area (greater than 1 rem/hr) and very high radiation area non-conformances. The inspectors reviewed radiological, controlled area exit transactions greater than 100 mrem. The inspectors also conducted walkdowns of high radiation areas (greater than 1 rem/hr) and very high radiation area entrances to determine the adequacy of the controls of these areas.

These activities constitute completion of the occupational exposure control effectiveness sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual  
Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the second quarter of 2012 through the first quarter of 2013. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed the licensee's corrective action program records and selected individual annual or special reports to identify potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

**40A2 Problem Identification and Resolution (71152)**

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an



integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of January 2013 through June 2013 although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

4. Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting the following issues:

- Action Request AR 280643 documenting the failure of control room damper WEA-AD-51
- Action Request AR 281275 documenting an unexpected step change in reactor building exhaust air

These activities constitute completion of two in-depth problem identification and resolution samples as defined in Inspection Procedure 71152-05.

b. Findings

- .1 Introduction. The inspectors identified two examples of a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," associated with the licensee's failure to follow the corrective action program procedure by promptly entering conditions adverse to quality into the corrective action program.

Description. The inspectors determined that for each example the licensee failed to follow Procedure SWP-CAP-01, "Corrective Action Program," Revisions 26-27, Step 4.1.3, which requires, in part, that station personnel promptly initiate an action request condition report for any condition an individual suspects is not right, including actual or suspected conditions adverse to quality. Promptly is defined in the procedure as no later than the end of shift. The licensee initiated Action Requests AR 286688 and AR 287423 to address the timeliness issues involving condition report initiation.

The first example occurred on March 16, 2013, when the reactor building exhaust air experienced a step change in flow from approximately 73000 cfm to 64000 cfm. This step change was displayed in the control room and identified by operators as an unexpected plant condition. The step change in reactor building exhaust air was entered into the corrective action program as Action Request AR 281275 on March 26, 2013. On April 3, 2013, a door on the reactor exhaust air stack was closed and the reactor exhaust air flow returned to approximately 73000 cfm. The open door on the reactor exhaust air stack represented a potentially unmonitored release path for radioactive material. Subsequent review by the licensee determined that adequate release monitoring was in place with this door open. The inspectors reviewed the timeline associated with this issue and identified that the reactor exhaust air step change was not entered into the corrective action program until ten days after initial identification of the unexpected condition.

The second example occurred on May 20, 2013, during licensee inspections of reactor vessel internal components. During these licensee inspections, ultrasonic examinations identified cracking on the H3, H4, H5, H6A, H6B and H7 welds of the core shroud. The inspectors reviewed these licensee inspections on June 3, 2013, and found that no condition reports had been initiated for the identified cracks. Following discussion with the inspectors, engineering personnel initiated Action Requests AR 286663, AR 286665 and AR 286672 to address the indications found on core shroud welds.

Analysis. The failure to follow the requirements of Procedure SWP-CAP-01 to promptly initiate a condition report for unexpected plant conditions was a performance deficiency associated with the Barrier Integrity cornerstone. The performance deficiency was more than minor, because if left uncorrected, the failure to follow procedures associated with the corrective action program could lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspectors determined that the finding was of very low safety significance because (1) the finding did not involve reactor coolant system pressurized thermal shock issues; (2) the finding did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system or heat removal components; (3) the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment; and (4) the finding represented a degradation of the standby gas treatment system only in its radiological barrier function for secondary containment. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component, in that, the licensee failed to implement their program at a sufficiently low threshold. Consequently, the licensee failed to ensure the timely entry of conditions adverse to quality into the corrective action program as required by station procedures [P.1(a)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires, in part, that, activities affecting quality shall be prescribed by documented instructions, procedure, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings. Contrary to the above, on March 16, 2013, and May 20, 2013, the licensee failed to implement activities affecting quality in accordance with station procedures. Specifically, on March 16, 2013, and May 20, 2013, the licensee failed to promptly initiate condition reports for a reactor exhaust air step change and indications of cracking on the core shroud as required by Procedure SWP CAP-01, Revisions 26-27, Step 4.1.3. This violation is being treated as an NCV, consistent with section 2.3.2.a of the Enforcement policy. The violation was entered into the licensee's corrective action program as Action Request AR 287423. (NCV 05000397/2013002-02, "Failure to Follow Corrective Action Program Procedures.")

- .2 Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," associated with the licensee's failure to follow station procedure PPM 1.3.57, "Barrier Impairments," Revision 29 and enter the appropriate technical specification for an inoperable control room envelope boundary.

Description. On March 15, 2013, during performance of Procedure OSP-WMA-M701, "Control Room Emergency Filtration System A Operability," Revision 13, safety-related damper WEA-AD-51 failed to close as required. Damper WEA-AD-51 isolated the main control room restroom and kitchen areas from the normal ventilation exhaust plenum during postulated accident conditions. The operating crew who were performing Procedure OSP-WMA-M701 noted that the damper failed to close and initiated Action Request AR 280643 to address the failed component. The operations crew did not initiate a barrier impairment permit as required by station Procedure PPM 1.3.57, "Barrier Impairments," Revision 29. Procedure PPM 1.3.57 also required a characterization of the impairment to ensure compliance with the plant's technical specifications. Procedure PPM 1.3.57, Table 4.12.3.a, "Summary of Control Room Ventilation Boundary (CRVB) Compliance with TS 3.7.3," states, in part, that for any breach in the positive pressure portion of the CRVB which exceeds the allowed cumulative breach size is considered a major breach of the control boundary envelope and requires the licensee to enter Technical Specification 3.7.3, "Control Room Emergency Filtration (CREF) System," Condition B for an inoperable control room envelope boundary.

On March 29, 2013, the inspectors walked down the main control room and noted that damper WEA-AD-51 was in an intermediate position. The inspectors questioned the operating crew shift manager if the control room envelope boundary was breached with this damper in an intermediate position. The shift manager provided the inspectors Technical Memorandum TM-2082, "Control Room Envelope Boundary Control," Revision 5, which showed that damper WEA-AD-51 was not part of the control room envelope. The shift manager also provided the inspectors the design basis document AED SPC 351, "Radwaste Building Mixed Air System," Revision 2, which documented that the control room envelope would remain intact even with damper WEA-AD-51 in a failed position because a 1998 test demonstrated that the control room emergency filtration system would be capable of maintaining sufficient differential pressure with this damper open such that control room envelope integrity is maintained.

The inspectors reviewed both TM-2082 and AED SPC 351 and noted that the technical memorandum does not show any boundary for the control room envelope where this damper interfaces with the control room (i.e. no boundary upstream or downstream of the damper). Additionally, they found that the design basis document does not reflect the current licensing basis because it credits a technical specification surveillance that was in place prior to Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003. This generic letter specifically alerted power reactor licensees that the existing technical specification surveillance which used differential pressure as an indicator of control room envelope integrity has a deficiency in that it does not measure control room envelope in-leakage and infers that the differential pressure surveillance proves that no contamination can enter the control room envelope if the control room envelope is at a higher pressure than adjacent areas. The generic letter went on to alert licensees that the results of integrated testing using tracer gas proved that the differential pressure surveillances are inadequate at measuring the amount of in-leakage into the control room envelope. Energy Northwest responded to Generic Letter 2003-01

and acknowledged that the positive pressure surveillance testing does serve to verify the operability of the control room emergency filtration subsystem train and provides an indication of control room envelope integrity but does not confirm control room envelope integrity using specific in-leakage values. Energy Northwest acknowledges that some form of in-leakage testing appears to be the optimal method for confirming boundary integrity and responded formally that they will utilize integrated testing using tracer gas to confirm the integrity of the control room envelope.

The inspectors reviewed Calculation NE-02-02-01, "Control Room Boundary Leakage Limitation," Revision 1, which establishes the maximum cumulative breach size for the control room envelope such that the unfiltered in-leakage flow rate will be less than that assumed in the licensing basis analysis for control room habitability. This calculation established a limit of 26.16 square inches as the maximum cumulative breach size for the main control room envelope. Since damper WEA-AD-51 is a 60 square inch opening into the control room envelope, the inspectors determined that the failure of this damper exceeded the cumulative breach allowed in station calculations. Based on questions posed by the inspectors, the licensee took action to close and gag shut damper WEA-AD-51 on March 29, 2013. Subsequent engineering review conducted in June 2013 concluded that while the opening did exceed the maximum allowable breach size established in station calculations, the control room envelope boundary remained operable because the breach created by WEA-AD-51 represented a degradation that would not invalidate the results of the most recent tracer gas test for the control room. The licensee entered this issue into their corrective action program as Action Request AR 288508.

Analysis. The failure to comply with station procedures associated with the control of barrier impairments for the control room envelope was a performance deficiency. This performance deficiency was more than minor because it affected the configuration control attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed an initial screening of the finding in accordance with Inspection Manual Chapter 0609.04, Phase 1 - Initial Screening and Characterization of Findings," and determined this finding to be of very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the control room. The inspectors determined that this finding had a cross-cutting aspect in the area of human performance associated with the resources component because the licensee failed to maintain complete, accurate and up-to-date design documentation. Specifically, TM-2082 contained out of date design information which caused station operators to not consider procedure PPM 1.3.57 applicable to damper WEA-AD-51 [H.2(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedure, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings. Contrary to the above, on March 15, 2013, the licensee failed

to implement activities affecting quality in accordance with station procedures. Specifically, on March 15, 2013, damper WEA-AD-51 was found in an open, intermediate position which results in a major breach of the control room envelope boundary and the licensee failed to follow Procedure PPM 1.3.57, "Barrier Impairments," Revision 29, Table 4.12.3.a which requires the licensee to enter Technical Specification 3.7.3, "Control Room Emergency Filtration (CREF) System," Condition B for any breach in the positive pressure portion of control room ventilation boundary exceeding allowed cumulative breach size that cannot be restored to full design in less than four minutes. This violation is being treated as an NCV, consistent with Section 2.3.2.a of the Enforcement policy. The violation was entered into the licensee's corrective action program as Action Request AR 288508. (NCV 05000397/2013002-03, "Failure to Follow Procedures for Inoperable Control Room Ventilation Boundary Damper.")

#### **40A3 Followup of Events and Notices of Enforcement Discretion (71153)**

.1 (Closed) Licensee Event Report (LER) 2012-006-01, Both Divisions of SDC Isolation Valves Made Inoperable

On September 19, 2012, the licensee initiated an action request that documented on several occasions during the previous refueling outage, operating crews defeated both channels of the isolation logic associated with shutdown cooling suction valves RHR-V-8 and RHR-V-9. Both divisions of the shutdown cooling isolation valves were made inoperable without specific procedural guidance and that this condition was reportable under 10 CFR 50.73(a)(2)(v)(B) and 50.73(a)(2)(v)(D). The enforcement aspects involving the licensee's failure to follow procedures associated with operation of the residual heat removal system shutdown cooling isolation logic are discussed in non-cited violation NCV 05000397/2012005-05, "Failure to Follow Shutdown Cooling Isolation Logic Bypass Procedures Results in Loss of Safety Function." This LER is closed.

.2 (Closed) LER 2012-007-00, Secondary Containment Inoperable due to both Airlock Doors being Open

On December 30, 2012, both doors of the 471' elevation airlock entrance of the Reactor Building were simultaneously opened for a short period of time. This was the result of the failure of the interlock between the outer security door R-204, and the inner door R-205. Both doors of a reactor building airlock open simultaneously results in an unintended entry into Technical Specification (TS) 3.6.4.1, "Secondary Containment," due to a failure to satisfy Surveillance Requirement (SR) 3.6.4.1.3. Since secondary containment is a system required to control the release of radioactive material and because the licensee failed to meet Technical Specification Surveillance Requirement 3.6.4.1.3 the event was determined to be reportable under 10 CFR 50.72(b)(3)(v)(C) and (D).

The LER was reviewed and no findings or violations of NRC requirements were identified. This LER is closed.

.3 (Closed) LER 2013-001-00, Secondary Containment Inoperable due to both Airlock Doors being Open

On January 7, 2012, both doors of the 501' elevation airlock entrance of the reactor building were simultaneously opened for a short period of time. This was the result of the failure of the interlock between the outer security door R-304, and the inner door R-305. Both doors of a reactor building airlock open simultaneously results in an unintended entry into Technical Specification 3.6.4.1, "Secondary Containment," due to a failure to satisfy Surveillance Requirement 3.6.4.1.3. Since secondary containment is a system required to control the release of radioactive material and because the licensee failed to meet Technical Specification Surveillance Requirement 3.6.4.1.3 the event was determined to be reportable under 10 CFR 50.72(b)(3)(v)(C) and (D).

The LER was reviewed and no findings or violations of NRC requirements were identified. This LER is closed.

#### **40A5 Other Activities**

Temporary Instruction 2515/182 - Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, Nuclear Energy Institute (NEI) 09-14, "Guideline for the Management of Buried Piping Integrity" (ADAMS Accession No. ML1030901420) to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122), with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued TI-2515/182 "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks" to gather information related to the industry's implementation of this initiative.

The inspectors reviewed the licensee's programs for buried pipe, underground piping and tanks in accordance with TI-2515/182 to determine if the program attributes and completion dates identified in Sections 3.3 A and 3.3 B of NEI 09-14, Revision 1, were contained in the licensee's program and implementing procedures. For the buried pipe and underground piping program attributes with completion dates that had passed, the inspectors reviewed records to determine if the attribute was in fact complete and to determine if the attribute was accomplished in a manner which reflected good or poor practices in program management. Based upon the scope described above, Phase I was found to meet all applicable aspects of NEI 09-14, Revision 1, as set forth in Table 1 of TI-2515/182.

## **4OA6 Meetings, Including Exit**

### Exit Meeting Summary

On March 28, 2013, the inspector presented the final inspection results of the temporary instruction inspection to Mr. A. Javorik, Vice President, Engineering, 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 May 23, 2013, the inspectors presented the inspection results of the review of inservice inspection activities to Mr. B. MacKissock, Plant General Manager, 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 June 6, 2013, the inspectors presented the results of the radiation safety inspections to Mr. M. Reddemann, Chief Executive Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On June 24, 2013, the inspectors presented the inspection results to Mr. W. Hettel, Vice President, Operations, 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.



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

V. Bhardwaj, Systems Engineering Manager, Engineering  
T. Biese, Supervisor, Health Physics Craft  
C. Blake, System Engineer  
S. Brown, Manager, Operations  
J. Carter, System Engineer  
J. Darwin, ASME Program Lead Engineer  
M. Davis, Manager, Radiation Protection  
K. Dittwer, Manager, Technical Services  
Z. Dunham, Compliance Supervisor, Licensing  
D. Gregoire, Manager, Regulatory Affairs  
M. Hedges, Principal Engineer, Licensing  
W. Hettel, Vice President, Operations  
A. Javorik, Vice President, Engineering  
C. John, Technical Services Engineer  
B. Khayyat, Supervisor, Code Program  
B. MacKissock, Plant General Manager  
D. Mand, Manager, Design Engineering  
M. McClain, Principal Health Physicist, Radiological Support  
S. Metzger, Health Physics Planner, Radiological Support  
J. Moon, Manager, Training  
J. Pierce, Manager, Chemistry  
M. Reddemann, Chief Executive Officer  
S. Richter, Manager, ISI Program  
R. Sanker, Supervisor, Radiological Operations  
R. Schuetz, Manager, Maintenance  
J. Sisk, Code Program  
D. Suarez, Licensing Engineer, Regulatory Affairs  
R. Thompson, Supervisor, Health Physics Craft  
J. Trautvetter, Compliance Supervisor, Regulatory Affairs  
K. VanSpeybroeck, System Engineering Supervisor, Engineering  
L. Williams, Supervisor, Licensing

#### **NRC Personnel**

T. Blount, Director, Division of Reactor Safety  
J. Drake, Branch Chief, Plant Support Branch 2, Division of Reactor Safety

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000397/2013003-01	NCV	Failure to Obtain NRC Approval for Changes to Reactor Water Cleanup System Piping (Section 1R15)
05000397/2013003-02	NCV	Failure to Follow Corrective Action Program Procedures (Section 4OA2)
05000397/2013003-03	NCV	Failure to Follow Procedures for Inoperable Control Room Ventilation Boundary Damper (Section 4OA2)

### Closed

05000397/2012-006-01	LER	Both Divisions of SDC Isolation Valves Made Inoperable (Section 4OA3)
05000397/2012-007-00	LER	Secondary Containment Inoperable due to both Airlock Doors being Open (Section 4OA3)
05000397/2013-001-00	LER	Secondary Containment Inoperable due to both Airlock Doors being Open (Section 4OA3)

### Discussed

TI 2515/182 Phase I	TI	Review of Implementation of the Industry Initiative to Control Degradation of Underground Piping and Tanks (Section 4OA5)
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## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ABN-WIND	Tornado/High Winds	24
PPM 1.5.12	Diesel Generator Reliability Program	4
OI-53	Offsite Power	13
OSP-ELEC-B703	Normal/Startup Transformer Fast Transfer Test	2
OSP-ELEC-W101	Offsite Station Power Alignment Check	22

ACTION REQUESTS

00280307	00280397	00280436	00280665	00281231
00281233	00281234	00281234	00281535	00282128
00283374	00283574	00283867	00285720	00285722
00285776	00285811	00285812	00285948	00286036
00286069	00286230	00286269	00286763	00286996
00282396	00282829	00283213	00285863	00285953
00287530	00287093	00287094		

**Section 1R04: Equipment Alignment**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SOP-RHR-SDC	RHR Shutdown Cooling	23
SOP-RHR-SDC-BYPASS	Bypassing RHR Shutdown Cooling Isolation Logic in Mode 4 and 5	14
SOP-SW-LU	Standby Service Water System Valve and Breaker Lineup	4
SOP-SGT-STBY	Placing Standby Gas Treatment in Standby Status	2

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
E505-2	DC One Line Diagram	7
EWD-9E-011	Electrical Wiring Diagram Residual Heat Removal System MOV RHR-V-9 (E12-F009)	17
EWD-9E-023	Electrical Wiring Diagram Residual Heat Removal System MOV RHR-V-8 (E12-F008)	23
EWD-9E-055	Electrical Wiring Diagram Residual Heat Removal System MOV RHR-V-53B (E12-F053B)	16
EWD-9E-093	Electrical Wiring Diagram Residual Heat Removal System Miscellaneous Relay Circuits (Div 1)	20
S 784	Structural Reactor Building Sacrificial Shield Wall Sh. 3	14
M 200 Sh 8	RHR Shutdwon Cooling Supply	8
M200 Sh 44	System Isometric for Recirc. Pump "A" Discharge	4

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
M200 Sh 106	Residual Heat Removal System	May 17, 1972
M521-1	Flow Diagram Residual Heat Removal System Loop "A"	112
M530-1	Flow Diagram Nuclear Boiler Recirculation System	89

ACTION REQUEST

00285336

WORK ORDER

01081780

**Section 1R05: Fire Protection**

PROCEDRUES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FPP-1.6	Combustible Loading Calculation Control	2
FPP-2.2.11	Fire Damper Inspection and Testing	1

TRANSIENT COMBUSTIBLE PERMITS

12-0130	12-0178	12-0190	12-0229	13-0040
13-0069	13-0075			

**Section 1R07: Heat Sink Performance**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ME-02-92-43	Room Temperature Calculation For DG Building, Reactor Building, Rad Waste, and Service Water Pump House Under Design Basis Accident Conditions	8
ME-02-92-41	Ultimate heat Sink Analysis	6
ME-02-11-06	Ultimate Heat Sink Analysis to Support TMU Outage	0
ME-02-92-244	Minimum Heat Transfer Rate Required for DCW Heat Exchangers A and B	0

## Section 1R07: Heat Sink Performance

### CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ME-02-91-42	Service Water Flow Rate to DCW Heat Exchangers	0
ME-02-07-03	R18 Fuel Pool Analysis	0
ME-02-92-243	DCW-HX-1c Design Performance Requirements	2

### PERFORMANCE ANALYSES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	13-DCW-HX-1B1 R-18 Analysis Results	
	13-DCW-HX-1B2 R-18 Analysis Results	
	13-DCW-HX-1C R-17 analysis Results	
	13-FPC-HX-1A R-6 Analysis Results	April 5, 1991
02298321-01	Thermal Performance of DCW HX 1B1 and 1B2	October 11, 2011
02021598-01	Thermal Performance of DCW HX 1B1 and 1B2	October 11, 2012
	Eddy Current Examination Results for FPC-HX-1B	February 13, 1996
01197973-01	Thermal Performance Data for DCW-HX-1C	August 11, 2011
02016032-01	Thermal Performance Data for DCW-HX-1C	June 13, 2012
	13 DCW-HX-1C Analysis Results	May 17, 2005

### MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
15-SW DBD 309	Design Basis Document, Standby Service Water System	13
	Columbia Generating Station Service Water Reliability Program	March 8, 2013
	Focused Self-Assessment Report - 2013 GL 89-13 and Service Water Self-Assessment for Ultimate Heat Sink Inspection	February 23, 2013
15-SW DBD 335	Design Specification - Standby Service Water Pumphouse HVAC	4

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
15-FPC DBD 327	Design Specification, Fuel Pool Cooling System	4
RCC-110797-00	Regulatory Commitment Change Form	June 16, 2004
RCC-110796-00	Regulatory Commitment Change Form	March 19, 2009
GO2-90-017	Nuclear Plant No. 2, Operating License NPF-21 Response to Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment	February 5, 1990

VENDOR DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Thermxchanger Exchanger Specification Sheet	January 19, 1972
1-72-06-31350	Struthers Wells Exchanger Specification Sheet	July 10, 1972

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-SW-M102	Standby Service Water Loop B Valve Position Verification	27
TSP-SW-A102	Service Water Loop B Cooling Coil Heat Load Capacity Test	2
OSP-SW/IST-Q702	Standby Service Water Loop B Operability	27
OSP-SW-M101	Standby Service Water Loop A Valve Position Verification	32
TSP-SW-A101	Service Water Loop A Cooling Coil Heat Load Capacity Test	2
OSP-SW-Q101	SW Spray Pond Average Sediment Depth Measurement	8
OSP-SW/IST-Q701	Standby Service Water Loop A Operability	25
12.14.1	Chemical Treatment of Standby Service Water	18
ABN-FPC-LOSS	Loss of Fuel Pool Cooling	9
ABN-SW	Service Water Trouble	12
SWP-CHE-02	Chemical Process Management and Control	19
OSP-SW-M103	HPCS Service Water Valve Position Verification	19

OSP-FPC/IST-Q701	Fuel Pool Cooling System Operability Surveillance	29
8.4.62	Thermal Performance Monitoring of DCW-HX-1B1 and DCW-HX-1B2	8
8.4.54	Thermal Performance Monitoring of DCW-HX-1A1 and DCW-HX-1A2	9
ABN-WIND	Tornado/High Winds	23
ABN-FLOODING	Flooding	15
ABN-EARTHQUAKE	Earthquake	11
ABN-ASH	Ash Fall	19
12.14.12	Reactor Closed Cooling Water	12

#### ACTION REQUESTS

00213968	00213970	00213971	00214689	00214699	00214968
00216320	00216387	00221668	00226308	00227078	00227727
00228275	00230512	00236786	00237068	00238605	00239550
00241685	00241749	00242221	00242500	00243573	00247912
00248455	00249260	00251594	00254112	00254538	00254643
00256861	00257827	00258539	00262312	00262315	00263420
00266478	00266784	00266817	00268099	00269083	00269571
00269573	00271184	00272567	00273283	00273822	00274907
00276768	00277228	00279213	00279563	00279726	00280063
00280142	00280281				

#### WORK ORDERS

01069541-01	01140886-01	02005228-01	02021238-01	01197973-01	02016032-01
02001557-01	02018197-01	01197651-01	02013600-01	02027146-01	01189016-01
01190356-01	02022260-01	01189067-01	01190357-01	01107071-01	01107072-01

**Section 1RO8: Inservice Inspection Activities**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ISI-3	Inservice Inspection Program Plan – Interval 3	5
MWP-6	ASME General Welding Standard Specification (MWP-6)	13
PDI-UT-1	Generic Procedure for the Ultrasonic Examination of Ferretic Pipe Welds	E
8.3.395	Radiography Procedures	5
8.3.6	Procedure for Monitoring Pipe Wall Thinning	10
8.3.257	Vendor ISI Procedures	9
RT-GEN	Radiography Examination	4
SPS-3-1	Liquid Penetrant Examination Instructions	1
SPS-7-3	Visual Examination – Component Supports	1
PWTP-01	Pipe Wall Thinning Monitoring Program Plan	12
GEH-UT-300	Procedure for Manual Examination of Reactor Vessel Assembly Welds in Accordance with PDI	11
MWP-10.2	Welding Filler Material Issue and Control Procedure Non-Vacuum Packaged	0
ISPM-9	Fall Protection	14

MISCELLANEOUS DOCUMENT

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Energy Northwest Snapshot Self-assessment Report	June 1, 2012

ACTION REQUESTS

239846	278605	238082	238099	243757
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240346	238721	239179	239174	239300
240577	239883	274772	225890	285472
285473	285478			

WORK ORDERS

2018885	2018888	2018894	1193499
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**Section 1R11: Licensed Operator Requalification Program**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-9	Operations Standards and Expectation	58

**Section 1R12: Maintenance Effectiveness**

ACTION REQUESTS

285950	286125	287015	287222	284173
175259	257508	288131	288329	

TECHNICAL MEMORANDUM

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
TM-2166	Acceptance Criteria Gas Intrusion GL2008-01	4

**Section 1R13: Maintenance Risk Assessment and Emergent Work Controls**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-20	Fuel Handling Expectations	8
PPM 1.5.14	Risk Assessment and Management for Maintenance/Surveillance Activities	28
PPM 1.3.76	Integrated Risk Management	36
PPM 1.3.83	Protected Equipment Program	15

ACTION REQUESTS

00283938          00283590          00283983          00285461          00286561  
00286615

**Section 1R15: Operability Evaluations**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
ME-02-13-09	RWCU Regenerative Heat Exchanger Piping Repair Patch Analysis	1
BDC 55-2927-OA	Update documentation affected by the downgrade of RWCU system	July 14, 1995
	Ultrasonic Thickness Measurement Data Sheet Report No. 4-13-1-1	April 2, 2013

ACTION REQUESTS

00281552          00281710          00281775          00282022          00283081  
00283181          00285355          00285261          00285336          00287100

WORK ORDERS

01058827          01069816

**Section 1R18: Plant Modifications**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EC 1497	Low Pressure Core Spray Keepfill Pump	3
ME-02-10-23	Hanger LPCS-4472-11H	0
Drawing FSKEC1497-2- 001	Keep-Fill Pump Sketch LPCS-P-2	0
Drawing LPCS- 1402-1	From LPCS-758-3.5 to Water Leg Pump LPCS-P-2	11,14

**Section 1R18: Plant Modifications**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
Drawing LPCS-3077-1	From Water Leg Pump LPCS-P-2 to LPCS-756-1.4	12
Drawing LPCS-3078-1	From LPCS-P-2 to RHR-867-5.7	10
Drawing H510	Small Bore Typical Supports	3

ACTION REQUEST

00219774

**Section 1R19: Post-Maintenance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
PPM 10.25.74	Testing Motor Operated Valve Motors and Controls	029-001
PPM 18.1.32	RHR-P-2B Pre-service Test	2
SOP-RHR-LU	RHR System Valve and Breaker Lineup	3
SWP-TST-01	Post Maintenance Testing Program	15

ACTION REQUESTS

00284127      00284198      00286036

WORK ORDERS

01177001      02008024      02007173      02008993      02017536  
02017536      02017724      02017725      02017726

## Section 1R20: Refueling and Other Outage Activities

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-13	Overtime Guidelines	2
PPM 3.1.1	Master Startup Checklist	54
PPM 3.1.2	Reactor Plant Startup	78
PPM 3.2.1	Normal Plant Shutdown	72
PPM 3.2.7	RPV Level Control Strategies in Modes 3, 4 and 5	3
PPM 3.4.4	Minimizing the Potential of Draining the Reactor Vessel	18
PPM 6.5.12	Control Blade Shuffle or Replacement	12
PPM 10.27.59	MSRV Instrument Replacement	6
SOP-CAVITY-DRAIN	Reactor Cavity and Dryer Separator Pit Draining	10
SOP-ELEC-BACKFEED	500 Kv Plant Backfeed	10

### ACTION REQUESTS

00285406	00286265	00286383	00286324	00286676
00287145	00287412	00287415	00287517	

## Section 1R22: Surveillance Testing

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ESP-B21-F101	60 Month Battery Testing of 250 VDC E-B2-1	11
TSP-RCS-R802	Division 2 High-Low Pressure Interface Valve Leak Test	9
TSP-DG1/LOCA-B501	Standby Diesel Generator DG 1 LOCA Test	21
TSP-DG1/LOP-B50	Standby Diesel Generator DG1 Loss of Power Test	18
TSP-RFW/X17A-R801	LLRT of RFW-V-10A and RFW-V-32A	6

**Section 1R22: Surveillance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
TSP-RFW/X17B- R801	LLRT of RFW-V-10B and RFW-V-32B	6

ACTION REQUESTS

00286306	00284982	00284752	00287187	00285793
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WORK ORDERS

02019495	02019497	02032328	02007331	02007332
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**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

MISCELLANEOUS DOCUMENT

<u>TITLE</u>
Evacuation Time Estimate Study Update

**Section 1EP6: Drill Evaluation**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
13.1.1	Classifying the Emergency	42
3.3.1	Reactor Scram	58
5.1.1	RPV Control	19
5.1.3	Emergency Depressurization	18
5.2.1	Primary Containment Control	20
5.3.1	Secondary Containment Control	18

MISCELLANEOUS DOCUMENT

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	CGS 2013 ERO Team A Drill After Action Report/Improvement Plan	April 30, 2013

**Section 2RS01: Radiological Hazard Assessment and Exposure Controls**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11.2.7.1	Area Posting	38
11.2.7.3	High Radiation Area, Locked High Radiation Area, and Very High Radiation Area Controls	39
11.2.13.1	Radiation and Contamination Surveys	33
11.2.14.4	Procurement, Receipt, Control and Leak Testing of Radioactive Sealed Sources and Devices	22
1.11.15	Control of Radioactive Material	7
1.11.23	Radioactive Material Container Control	4
11.2.14.9	Control and Labeling of Radioactive Material	15
11.2.15.7	Release of Material from Radiologically Controlled Areas	19

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	2012 USA Self-Assessment Report: Radiation Protection	August 23, 2012
AR-SA 223847	Self-Assessment Report: Contamination Control	October 15, 2012
AR-SA 254736-02	Benchmark Report: Susquehanna Steam Electric Station	October 10, 2012

RADIATION WORK PERMITS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
30003274	RX 548 RWCU HX 1A Pipe Repair – LHRA-HRISK-STK	1
30003275	RX 548 RWCU HX 1A Pipe Repair – LHRA-HRISK-STK-MPACKS	2
30003090	R21 DW R/R Soft Seats on RFW-V-10A/B **HR****HIGH RISK**	1
30003098	R21 RF Wetwork InVessel, SFP, and Equipment Pool *HR*	4

## RADIATION SURVEYS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
2020313	501' Undervessel (Air Sample)	May 18, 2013
2023613	RX 501' Drywell UV	May 18, 2013
2091613	RX 501' Drywell UV	May 29, 2013
2104713	548' RB RWCU Hx Rm	May 31, 2013
2124013	DW 512' RFW-V-10B (Air Sample)	June 4, 2013
2125813	RB 548' RWCU HX Room	June 4, 2013
2126713	Drywell 501 Elev 510	June 4, 2013

## ACTION REQUESTS

00264490	00265135	00265566	00268753	00269779
00270371	00271363	00271422	00276129	00286775

## MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	Radioactive Source Inventory	April 22, 2013
	RCA Access Restriction and Reinstatement Form	June 4, 2013
AR 263899	Condition Evaluation	

### **Section 2RS02: Occupational ALARA Planning and Controls**

## PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11.2.2.11	Evaluations for Maintaining TEDE ALARA	6
11.2.2.12	Radiological Risk Assessment and Management	4
11.2.2.13	Flushing and Shielding Evaluations	1
11.2.2.7	ALARA Procedure Analysis	12
11.2.2.8	ALARA Engineering Analysis	7
GEN-RPP-01	ALARA Program Description	7
GEN-RPP-02	ALARA Planning and Radiation Work Permits	23
GEN-RPP-13	ALARA Committee	8
GEN-RPP-14	Control of Temporary Shielding	10
HPI-0.19	Radiation Protection Standards and Expectations	13
HPI-12.97	Remote Radiological Work Monitoring	0
SWP-RPP-01	Radiation Protection Program	11

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	2012 USA Self-Assessment Report: Radiation Protection	August 23, 2012
AR-SA 223847	Self Assessment Report: Contamination Control	October 15, 2012
AR-SA 254736-02	Benchmark Report: Susquehanna Steam Electric Station	October 10, 2012

ACTION REQUESTS

AR00248802	AR00248804	AR00265331	AR00266600	AR00267426
AR00267521	AR00267983	AR00268051	AR00269127	AR00269345
AR00269711	AR00269719	AR00271523	AR00272005	AR00272173
AR00272824	AR00272824	AR00273415	AR00273760	AR00275408
AR00275508	AR00277799	AR00278452	AR00278622	AR00278868
AR00281051	AR00281729			

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	CGS RF20 Collective Radiation Exposure Final Report	
	CGS CY 2010 -2013 Dose and 3-Year Rolling Average	
	SSAC R20 RWCU Return Line Replacement	March 11, 2011
IERL2 11-1	CGS CRE/Source Term Reduction 10 Year Plan	
06-205384-07	RWCU Return Line Decision Making Matrix	June 1, 2010

RADIATION WORK PERMITS AND ALARA JOB REVIEWS

<u>RWP NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
30003055	Drywell Shielding	0
30003071	LLRT/System Lineup	1
30003087	Valve Work	1
30003099	R21 RF RX Reassembly Cavity Work	1
30003236	RW 467 RWCU Pump Room Valve Work	0
30003269	RX 548 RWCU HX 1A Repair "LHRA"	2
30003270	RX 548 RWCU HX 1A Weld Repair "LHRA"	4
30003271	RX 548 RWCU HX 1A Weld Repair "LHRA"	0
30003272	RWCU-V-101, 105, 102	0



## **Section 40A1: Performance Indicator Verification**

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-INST-H101	Shift and Daily Instrument Checks (Modes 1, 2 and 3)	76-77
HPI 0.14	Accessing and Reporting NRC Occupational Exposure Control Effectiveness Performance Indicator Data	5

### MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	2012 Annual Radioactive Effluent Release Report	April 2013
AR00270371	Elevated dose rates found in B RHR Heat exchanger Rm Rx 548'	September 11, 2012
AR00265135	Dose rate alarm on RW 437	June 11, 2012

### ACTION REQUEST

258717

## **Section 40A2: Identification and Resolution of Problems**

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
GEN-RPP-06	Dosimetry Program Description	9
PPM1.3.57	Barrier Impairment	29
PPM 1.5.16	Control Room Envelope Habitability Program	0
TSP-CREF-Z801	Control Room Envelope Unfiltered In-Leakage Tracer Gas Test	6
CSP-INST-D201	Chemistry Daily Channel and Source Checks	18
PPM 12.5.35A	Operation of the Temporary Gas Flow Cart for REA	6
SWP-CAP-01	Corrective Action Program	27

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
Calculation NE 02-02-01	Control Room Boundary Leakage Limitation	1
EC 11881-WEA- AD-51	Impact on Control Room Envelope Decision Making Document	May 23, 2013
ENW Letter GO2-07-045	Columbia Generating Station, Docket No. 50-397 Final Response to Generic Letter 203-01 "Control Room Habitability"	March 2, 2007
ENW Letter GO2-03-127	Columbia Generating Station, Docket 50-397; 60-Day Response to Generic Letter 203-001 "Control Room Habitability"	August 11, 2003
	ENW Design Specification for Division 15 Section 15B.2 Essential Heating Ventilating and Air Conditioning Systems	7
Drawing M548-1	Flow Diagram HVAC For Control and Switchgear Rooms Radwaste Building	101
SWP-RPP-01	Radiation Protection Program	11

ACTION REQUESTS

00211150	00277518	00277619	00279573	00279855
00280227	00280260	00280288	00280643	00281558
00281645	00280411	00281792	00281971	00282176
00282241	00285849	00285811	00285238	00284908
00284915	00284683	00284173	00282284	00286663
00286665	00286672	00286688	00286690	00287423

**Section 40A3: Event Follow-Up**

ACTION REQUESTS

271826	276337	276734	277307	277700
279768				

**Section 40A5: Other Activities**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
PWTP-02	Pipe Wall Thinning Monitoring Program Plan	3

ACTION REQUEST

233624

March 13, 2013

We have discussed the schedule for these inspection activities and understand that you will be our regulatory contact for this inspection. Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection or the material requested, please contact Peter Jayroe at 817-200-1174, email [Peter.Jayroe@nrc.gov](mailto:Peter.Jayroe@nrc.gov)

This email does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, Control Number 3150 0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

## INSERVICE INSPECTION DOCUMENT REQUEST

Inspection Dates: May 20, 2013 through May 24, 2013  
Inspection Procedures: IP 71111.08 "Inservice Inspection (ISI) Activities"  
Inspectors: Isaac Anchondo, Reactor Inspector  
Peter Jayroe, Reactor Inspector

### A. Information Requested for the In-Office Preparation Week

The following information should be sent to the Region IV office in hard copy or electronic format (ims.certrec.com preferred), in care of Peter Jayroe, by May 6, 2013, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspector will select specific items from the information requested below and then request from your staff additional documents needed during the onsite inspection week (Section B of this enclosure). We ask that the specific items selected from the lists be available and ready for review on the first day of inspection. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the inspector(s), and provide subject documentation during the first day of the onsite inspection. If you have any questions regarding this information request, please call the inspector as soon as possible.

#### A.1 ISI/Welding Programs and Schedule Information

- a) A detailed schedule (including preliminary dates) of:
  - i) Nondestructive examinations (NDEs) planned for ASME Code Class systems and containment, performed as part of your ASME Section XI risk informed (if applicable), and augmented ISI programs during the upcoming outage.  
  
Provide a status summary of the NDE inspection activities vs. the required inspection period percentages for this Interval by category per ASME Section XI IWX-2400 (Do not provide separately if other documentation requested contains this information).
  - ii) Welding activities that are scheduled to be completed during the upcoming outage (ASME Code Class structures, systems, or components)
- b) A copy of ASME Section XI Code Relief Requests and associated NRC Safety Evaluations applicable to the examinations identified above.

- c) A list of NDE reports (ultrasonic, radiography, magnetic particle, dye penetrate, Visual VT-1, VT-2, and VT-3), which have identified relevant conditions on ASME Code Class systems since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests. The list of NDE reports should include a brief description of the SSC where the relevant condition was identified.
- d) A list with a brief description (e.g., system, material, pipe size, weld number, and NDE performed) of the welds in ASME Code Class systems which have been fabricated due to component repair/replacement activities since the beginning of the last refueling outage, or are planned to be fabricated this refueling outage.
- e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.
- f) A copy of any 10 CFR Part 21 reports applicable to your SSCs within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.
- g) A list of any temporary non-code repairs in service (e.g., pinhole leaks).
- h) Copies of the most recent self assessments for the ISI, Welding, and Alloy 600 programs.

A.2 Additional Information Related to All Inservice Inspection Activities

- a) A list with a brief description of ISI inspection related issues (e.g., condition reports) entered into your corrective action program since the beginning of the last refueling outage (for the applicable unit). For example, a list based upon data base searches using key words related to piping such as: ISI, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion or errors in piping/NDE examinations.
- b) Provide names and phone numbers for the following program leads:
  - ISI contacts (Examination, planning)
  - Containment Exams
  - Snubbers and Supports
  - Repair and Replacement Program Manager
  - Licensing Contact
  - Site Welding Engineer

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (May 20, 2013):

B.1 ISI / Welding Programs and Schedule Information

- a) Updated schedules for ISI/NDE activities, planned welding activities, and schedule showing contingency repair plans, if available.
- b) For ASME Code Class welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:
  - i) Weld data sheet (traveler)
  - ii) Weld configuration and system location
  - iii) Applicable Code Edition and Addenda for weldment
  - iv) Applicable Code Edition and Addenda for welding procedures
  - v) Applicable weld procedures (WPS) used to fabricate the welds
  - vi) Copies of procedure qualification records (PQRs) supporting the WPS from B.1.b.v
  - vii) Copies of mechanical test reports identified in the PQRs above
  - viii) Copies of the nonconformance reports for the selected welds (If applicable)
  - ix) Radiographs of the selected welds and access to equipment to allow viewing radiographs (If RT was performed)
  - x) Copies of the preservice examination records for the selected welds
  - xi) Copies of welder performance qualifications records applicable to the selected welds, including documentation that welder maintained proficiency in the applicable welding processes specified in the WPS (at least six months prior to the date of subject work)
  - xii) Copies of NDE personnel qualifications (VT, PT, UT, RT), as applicable
- c) For the ISI related corrective action issues selected by the inspector(s) from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.
- d) For the NDE reports with relevant conditions on ASME Code Class systems selected by the inspector from section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.
- e) A copy of (or ready access to) most current revision of the ISI Program Manual and Plan for the current Interval.
- f) For the NDEs selected by the inspector from section A of this enclosure, provide copy of the NDE procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Code, Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g., the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment to be used (e.g.,

ultrasonic unit, cables, and transducers including serial numbers) and NDE personnel qualification records.

B.2 Codes and Standards

- a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):
  - i) Applicable Editions of the ASME Code (Sections V, IX and XI) for the inservice inspection program and the repair/replacement program.
  - ii) Any other applicable EPRI and industry standards referenced in the plant procedures for welding and NDE activities.

Inspector Contact Information:

Isaac Anchondo  
Reactor Inspector  
817-200-1152  
[Isaac.Anchondo@nrc.gov](mailto:Isaac.Anchondo@nrc.gov)

Peter Jayroe  
Reactor Inspector  
817-200-1174  
[Peter.Jayroe@nrc.gov](mailto:Peter.Jayroe@nrc.gov)

Mailing Address:  
US NRC Region IV  
Attn: Peter Jayroe  
1600 Lamar Blvd,  
Arlington, TX 76011



**The following items are requested for the  
Occupational Radiation Safety Inspection  
at Columbia Generating Station  
(June 3-7, 2013)  
Integrated Report 2013003**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before Monday, May 20, 2013.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedures 71124.01 & .02 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact the lead inspector, Louis Carson, at (817)200-1221 or [Louis.Carson@nrc.gov](mailto:Louis.Carson@nrc.gov). The other inspectors will be Natasha Greene at (817)200-1441 or [John.O'Donnell@nrc.gov](mailto:John.O'Donnell@nrc.gov).

**PAPERWORK REDUCTION ACT STATEMENT**

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

**1. Radiological Hazard Assessment and Exposure Controls (71124.01)**  
**Inspection activities to be conducted by John O'Donnell are as follows:**

Date of Last Inspection: May 25, 2013

- A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians
  - B. Applicable organization charts
  - C. Audits, self-assessments, and LERs written since date of last inspection, related to this inspection area
  - D. Procedure indexes for the radiation protection procedures
  - E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
    - 1. Radiation Protection Program Description
    - 2. Radiation Protection Conduct of Operations
    - 3. Personnel Dosimetry Program
    - 4. Posting of Radiological Areas
    - 5. High Radiation Area Controls
    - 6. RCA Access Controls and Radworker Instructions
    - 7. Conduct of Radiological Surveys
    - 8. Radioactive Source Inventory and Control
    - 9. Declared Pregnant Worker Program
  - F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection
    - a. Initiated by the radiation protection organization
    - b. Assigned to the radiation protection organization
    - c. Any corrective action documents related to any locked high radiation area occurrences
- NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable" so that the inspector can perform word searches.
- If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)
- G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)
  - H. List of active radiation work permits
  - I. Radioactive source inventory list

**2. Items needed to support the ALARA Planning & Controls (71124.02) Inspection activities to be conducted by Louis C. Carson II are as follows:**

Date of Last Inspection: August 17, 2011

- A. List of contacts and telephone numbers for ALARA program personnel
- B. Applicable organization charts
- C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA
- D. Procedure index for ALARA Program
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
  - 1. ALARA Program
  - 2. ALARA Committee
  - 3. Radiation Work Permit Preparation
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

- G. List of work activities greater than 1 rem, since date of last inspection.  
Include original dose estimate and actual dose.
- H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)
- I. Outline of source term reduction strategy
- J. A major focus of this inspection will be the results of the power upgrade outage, please provide the following:

Annual CGS ALARA Report for 2012

Last post Refueling-Power- Outage Report

List of ALARA Package that Exceeded the Original Dose Projections

Provide Written Justifications if Dose were Exceeded by 50 percent & 5 Person-Rem