



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

May 8, 2013

Mr. Eric W. Olson  
Site Vice President  
Entergy Operations, Inc.  
River Bend Station  
5485 U.S. Highway 61  
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION – NRC INTEGRATED INSPECTION REPORT  
05000458/2013002

Dear Mr. Olson:

On March 30, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station. The enclosed inspection report documents the inspection results which were discussed on April 4, 2013, with you 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.

One NRC-identified finding and three self-revealing findings of very low safety significance (Green) were identified during this inspection.

Three of these findings were determined to involve violations of NRC requirements. The NRC is treating these violations as non-cited violations 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 River Bend 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 River Bend 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

E. Olson

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NRC Public Document Room or from the Publicly Available Records (PARS) component of 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/**

David L. Proulx, Acting Branch Chief  
Project Branch C  
Division of Reactor Projects

Docket Nos.: 50-458  
License Nos: NPF-47

Enclosure: Inspection Report 05000458/2013002  
w/ Attachments:

1. Supplemental Information
2. Information Request for Inspection Activities Documented in 2RS1, 2RS2, and 4OA1
3. Information Request for Inspection Activities Documented in 1R08

cc w/ encl: Electronic Distribution

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GFLarkin	AJBarrett	RCHagar	TRFarnholtz	GBMiller	VGGaddy
E-Proulx	E-Proulx	/RA/	GGeorge for	/RA/	/RA/
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000458  
License: NPF-47  
Report: 05000458/2013002  
Licensee: Entergy Operations, Inc.  
Facility: River Bend Station  
Location: 5485 U.S. Highway 61  
St. Francisville, LA 70775  
Dates: January 1 through March 30, 2013  
Inspectors: G. Larkin, Senior Resident Inspector  
A. Barrett, Resident Inspector  
L. Ricketson, P.E., Senior Health Physicist  
N. Greene, Ph.D., Health Physicist  
W. Sifre, Senior Reactor Inspector  
J. Laughlin, Emergency Preparedness Inspector  
Approved By: David L. Proulx, Acting Branch Chief  
Project Branch C  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000458/2013002; 01/01/2013 – 03/30/2013; RIVER BEND STATION; Integrated Resident and Regional Report; Maintenance Effectiveness; Radiological Hazard Assessment and Exposure Controls; Occupational ALARA Planning and Controls

The report covered a 3-month period of inspection by resident inspectors, two announced baseline inspections by region-based inspectors, and one announced baseline inspection by a headquarters-based inspector. Three Green non-cited violations and one Green finding of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." 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: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(1) associated with the licensee's failure monitor the floor and equipment drains system against licensee-established goals. The licensee failed to properly classify two maintenance preventable functional failures for this system, and as a result, inappropriately left the system in maintenance rule a(2) status. In response, the licensee properly classified the subject failures and classified the affected system into maintenance rule (a)(1) status. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2013-00295.

The failure to adequately monitor the performance of the floor and equipment drains system is a performance deficiency. The performance deficiency was more-than-minor and was therefore a finding because if left uncorrected, the failure to adequately monitor the performance of the floor and equipment drains system 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 is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment

designated as high safety significance in accordance with the licensee's maintenance rule program. No cross-cutting aspect was assigned because the finding does not represent current performance (Section 1R12).

#### Cornerstone: Occupational Radiation Safety

- Green. The inspectors reviewed two examples of a self-revealing, non-cited violation of Technical Specification 5.7.1 that resulted because individuals failed to request briefings of the dose rates in high-radiation areas before entry. In response, the licensee coached the involved individuals involved about the acceptable radiation work practice. The licensee entered this issue into their corrective action program as Condition Reports 2012-07643 and 2013-01275.

The failure to request briefings of the dose rates in high-radiation areas before entry was a performance deficiency. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the work practices component, because licensee personnel failed to use human error prevention techniques, such as self- and peer-checking, commensurate with the risk of the assigned task such that work activities were performed safely [H.4(a)] (Section 2RS1).

- Green. The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.7.1 that resulted because a radiation protection technician failed to provide adequate job coverage. In response, the licensee coached the involved individuals involved about the acceptable radiation work practice. The licensee entered this issue into their corrective action program as Condition Report 2013-00479.

The failure to provide adequate radiation protection job coverage was a performance deficiency. The requirement not met was Technical Specification 5.7.1. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher

than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the decision making component, because licensee personnel did not make a risk-significant decision using a systematic process when faced with uncertain or unexpected plant conditions [H.1(a)] (Section 2RS1).

- Green. The inspectors reviewed a self-revealing finding associated with the licensee's failure to provide adequate instructions for installing a new seal cartridge in the reactor water cleanup 'A' pump. The licensee entered this issue into their corrective action program as Condition Report CR-RBS-2011-09015. In that condition report, the licensee developed a corrective action to revise all reactor water cleanup procedures and model work orders to verify proper installation of the pump seal.

The failure to provide adequate instructions for properly installing reactor water cleanup pump seal cartridges was a performance deficiency. The performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and affected the cornerstone objective in that it caused increased collective radiation dose for occupational workers. Additionally, the finding was similar to example 6(i) in Appendix E to Manual Chapter 0612, "Power Reactor Inspection Reports – Examples of Minor Issues." Using Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding had very low safety significance because, although the finding involved ALARA planning and work controls, the licensee's latest three-year rolling average collective dose was less than 240 person-rem. This finding had a cross-cutting aspect in the human performance area, associated with the resources component, because the licensee failed to use complete, accurate and up-to-date procedures and work orders to perform the seal installation, which resulted in unnecessary dose [H.2(c)] (Section 2RS2).

**B. Licensee-Identified Violations**

None

## REPORT DETAILS

### Summary of Plant Status

River Bend Station began the inspection period at 100 percent reactor power. It departed from full power as follows:

- On January 4, operators reduced reactor power to 75 percent for a control rod adjustment and returned to 100 percent power on the same day.
- On January 5, operators reduced reactor power to 87 percent to repack the feedwater regulating valve B after a steam leak developed. Operators returned the plant to 100 percent power on January 6.
- On January 23, operators reduced reactor power to 64 percent for a control rod sequence exchange and returned to 100 percent power on January 24.
- On February 8, the plant reduced power to 89 percent to perform a control rod adjustment and returned to 100 percent power on February 9.
- On February 16, the operators took the plant offline to begin refuel outage 17. The plant started up in power from refuel outage 17 on March 15. On March 26, after arranging two intermediate control rod patterns, operators established their final 100 percent control rod pattern.

The plant remained at 100 percent reactor power for the remainder of the inspection period.

### 1. REACTOR SAFETY

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

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

##### Readiness for Impending Adverse Weather Conditions

##### a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for February 25, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On that day, the inspectors walked down the primary containment structure equipment hatch, which was open at the time due to refueling outage 17, and the condensate storage tank because their safety-related functions could be affected 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 Updated Safety Analysis Report 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 dispositioned 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 readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

**1R04 Equipment Alignment (71111.04)**

Partial Walkdown

a. Inspection Scope

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

- Residual heat removal B in shutdown cooling with suppression pool cooling B in alternate decay heat removal and residual heat removal A out of service, completed on February 19 (during refueling outage 17)
- Division 1 emergency diesel generator, completed on February 21
- Residual heat removal pump A in shutdown cooling with residual heat removal B out of service, completed on March 6 (during refueling outage 17)
- Spent fuel pool cooling A, completed on March 12

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, Updated Safety Analysis Report, 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 four partial system walkdown samples 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 and on the dates indicated:

- January 9: fire zone ET-1, B tunnel east smoke detectors – deluge initiated
- January 9: fire zone ET-2, B tunnel west smoke detectors – deluge initiated
- February 7: auxiliary building, 78-foot, 98-foot, 114-foot, and 141-foot elevations
- February 11: reactor building, 162-foot and 186-foot elevations
- February 13: control building, 98-foot and 116-foot elevations
- March 15 (during refueling outage 17): drywell
- March 19: auxiliary building, 78-foot, 98-foot, and 141-foot elevations

The inspectors reviewed these 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 seven quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the residual heat removal heat exchangers. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines"; the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one heat sink inspection sample 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 nine nondestructive examination activity and reviewed 21 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 examination:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Water Cleanup	WCS-005A-FW007	Ultrasonic
Jet Pump Beam	BB-1	Ultrasonic (IVVI)
Jet Pump Beam	BB-2	Ultrasonic(IVVI)
Jet Pump Beam	BB-3	Ultrasonic(IVVI)
Core Spray Sparger A	S2a	Enhanced VT-1 (IVVI)
Core spray Sparger C	S2c	Enhanced VT-1 (IVVI)
Core Spray Piping	P3a (L) 59 °	Enhanced VT-1 (IVVI)
Core Spray Piping	P2a (R) 93 °	Enhanced VT-1 (IVVI)
Core Spray Piping	P3b (R) 119 °	Enhanced VT-1 (IVVI)

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Recirculation Pump	B33-PC001A-WJ-3	Liquid Penetrant
Residual Heat Removal	RHS-014A-FW010	Magnetic Particle
Main Steam	MSS-008A-FW029	Magnetic Particle
Feedwater	FWS-062A-FW012	Magnetic Particle
Feedwater	FWS-037A-FW012AA/AD	Magnetic Particle
Feedwater	FWS-037A-FW008AA/DD	Magnetic Particle

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Water Cleanup	WCS-006B2-XI-SW004	Ultrasonic
Standby Liquid Control	SLS-037D-FW004	Ultrasonic
Residual Heat Removal	RHS-034B-FW003	Ultrasonic
Reactor Coolant	RCS-800CX-SW018B	Ultrasonic
Main Steam	MSS-900A3-FWD05	Ultrasonic
Reactor Core Isolation Cooling	ICS-001B-FW004	Ultrasonic
Feedwater	FWS-038A-SW012	Ultrasonic
Core Spray-Low	CSL-043B-FW001	Ultrasonic
Core Spray-High	CSH-041A-FW005	Ultrasonic
Feedwater	FWS-037A-SW019	Ultrasonic
Main Steam	MSS-900A2-FWD04	Ultrasonic
Reactor Coolant	RCS-800CX-SW018A	Ultrasonic
Residual Heat Removal	RHS-034B-FW002	Ultrasonic
Standby Liquid Control	SLS-037D-FW003A	Ultrasonic
Reactor Water Cleanup	WCS-006B2-XI-FW011	Ultrasonic

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 reviewed three welds on pressure retaining risk significant systems.

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELD TYPE</u>
Leakage Control Penetration Valve	LSV-SP1B	Gas Tungsten Arc

Standby Diesel Generator EGS-EG1A

Gas Tungsten Arc

Leakage Control Penetration Valve LSV-LS28B

Single Metal Arc

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.

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

a. Inspection scope

The inspectors reviewed 13 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 January 22, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations and 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 February 22, 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 due to shutdown for refueling outage 17 and fuel movement.

In addition, the inspectors assessed the operators' adherence to plant procedures, including EN-OP-115, "Conduct of Operations," Revision 013 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:

- System 512 – control room panels
- System 552 – containment atmosphere monitoring

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

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(1) (maintenance rule) associated with the failure to monitor the performance of the floor and equipment drains system against licensee-established goals.

Description. Inside the drywell, leakage from the reactor coolant system pressure boundary is detected by independently monitored variables, such as sump level changes, drywell gaseous levels, and particulate radioactivity levels. The primary means of quantifying leakage in the drywell involves a leakage process computer, DER-KC174, which monitors the drywell floor and pedestal drain sump. The computer calculates drywell leakage and starts/stops sump pumps in the drywell to control sump



level. It also will activate an alarm if it detects an abnormal condition. The inspectors challenged two of the licensee's functional failure assessments associated with the Leakage Process Computer. Specifically:

- Condition Report CR-RBS-2010-05306 documented that the reactor floor drain pump would not automatically stop at the required level set point. The maintenance rule function was lost because the process computer could not automatically control pedestal sump pump operation.
- Condition Report CR-RBS-2009-05361 documented that during a surveillance test, the drywell floor drain, DFR-DNF1101, failed to achieve the specified drain rate due to blockages caused by foreign material in the drain piping. The maintenance rule function was lost because drain flow rate prevented the Leakage Process Computer from determining an accurate and timely reactor coolant unidentified leak rate.

After reviewing the inspectors' challenges, the licensee initiated CR-RBS-2013-00295, corrected the maintenance rule functional failure classifications for these two condition reports and placed the floor and equipment drains system in maintenance rule (a)(1) status. The licensee identified that the computer had failed to perform its functions twice within an 18-month interval. As a result, the floor and equipment drains system had exceeded its performance criteria of one functional failure in an 18-month period, and should have been in maintenance rule a(1) status from October 12, 2009, to approximately April 12, 2011.

Analysis. The failure to adequately monitor the performance of the floor and equipment drains system was a performance deficiency. This performance deficiency was more than minor and is therefore a finding because if left uncorrected, the failure to adequately monitor the performance of the floor and equipment drains system would have the potential to lead to a more significant safety concern. Specifically, the failure to adequately monitor the performance of that system could lead to an undetected and therefore unresolved degradation in system availability. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety significance in accordance with the licensee's maintenance rule program. No cross-cutting aspect was assigned because the finding does not represent current performance.

Enforcement. 10 CFR 50.65(a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of systems, structures, and components within the scope of the rule against licensee-established goals in a manner sufficient to

provide reasonable assurance that such systems, structures, and components are capable of fulfilling their intended safety functions. 10 CFR 50.65(a)(2) requires, in part, that monitoring specified in paragraph (a)(1) is not required where it has been demonstrated the performance or condition of a system, structure, and component is being effectively controlled through appropriate preventive maintenance, such that the system, structure, and component remains capable of performing its intended function.

Contrary to the above, from October 12, 2009, to April 12, 2011, the licensee failed to demonstrate that the performance or condition of the floor and equipment drains system had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor the system against licensee-established goals. Specifically, the licensee failed to identify two maintenance preventable functional failures of the floor and equipment drains system, which demonstrated that the performance or condition of this system was not being effectively controlled through the performance of appropriate preventative maintenance and, as a result, that goal setting and monitoring was required. 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 Condition Report CR-RBS-2013-00295 (NCV 05000458/2013002-01, "Failure to Monitor the Performance of the Floor and Equipment Drains System").

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

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

The inspectors reviewed licensee personnel's evaluation and 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:

- Emergent work in Fancy Point switchyard to investigate opened generator output breaker, January 17
- Risk due to fire water out of service in tunnels and radwaste building, January 18
- Planned maintenance on the station blackout diesel and surveillance testing on the Division 3 emergency diesel generator, January 28
- Planned maintenance on the Division 1 battery charger while moving scaffold material in the main transformer yard, February 6
- Emergent work to troubleshoot reactor core isolation cooling minimum flow valve cycling with residual heat removal Division 1 out of service for quarterly surveillance, February 7
- Risk due to severe weather and yellow outage risk condition, February 25

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 six 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:

- CR-RBS-2012-07027, pressure control valve, SWP-PVY32A, damaged seat, reviewed on January 23
- CR-RBS-2012-04063, residual heat removal pump minimum flow valve tripped when valve opened, reviewed on January 24
- CR-RBS-2013-00560, Division 3 emergency diesel generator fuel oil foreign material exclusion, reviewed on February 1
- CR-RBS-2013-01661, refuel platform main hoist emergency brake engaged (refueling outage 17), reviewed on February 27
- CR-RBS-2013-02182, refuel platform main hoist emergency brake slow to operate (refueling outage 17), reviewed on March 6
- CR-RBS-2013-02569, control rod 48-17 failed to settle at target position, reviewed on March 26

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 Updated Safety Analysis Report 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 six operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

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:

- WO-00321421, "HVY-PV32A Rebuild and Installation," reviewed on February 20
- WO-00313939, "HVK-TV17B Slow to Operate / Gagged Full Open," reviewed on March 7
- WO-00339910, "SWP-P2D Packing was Found Hot During Run," reviewed on March 13
- WO-00323591, "E51-SOV005 Remove and Replace the Solenoid Operated Valve," reviewed on March 25
- WO-00343651, "HVK-CHL-1D Control building Ciller Water Chiller 1D Motor Didn't Start," reviewed on March 26

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- 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 Updated Safety Analysis Report, 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 five 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 17, conducted February 16 to March 21, 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.
- 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 primary 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 Updated Safety Analysis Report, 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.

- STP-209-6310, Revision 38, "RCIC Quarterly Pump and Valve Operability Test," performed on January 18 (inservice test)
- STP-053-3001, Revision 20, "Jet Pump Operability Test," performed on January 18 (routine)
- STP-403-0603, Revision 7, "Division 1 Standby Gas Treatment System Functional Test," performed on January 18 (routine)
- STP-256-6305, Revision 96, "Division 1 Standby Service Water Quarterly Valve Operability Test," performed on February 6 (inservice test)
- STP-309-0601, Revision 43, "Division 1 ECCS Test," performed on February 27 (routine)
- TSP-0021, Revision 6, "Containment Monitoring System Leak Test," performed on March 6 (routine)

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

These activities constitute completion of six 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 (IP 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 numbers ML12354A521 and ML13014A041 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 71114.04-05.

b. Findings

No findings were identified.

**1EP6 Drill Evaluation (71114.06)**

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on January 22, 2013, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the postevolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's



performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario 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**

**Cornerstone: Occupational Radiation Safety**

**2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)**

a. Inspection Scope

This area was inspected to: (1) review and assess 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

.1 Failure to Request Briefings of the Dose Rates in High-Radiation Areas Before Entry

Introduction. The inspectors reviewed two examples a self-revealing green, non-cited violation of Technical Specification 5.7.1 that resulted because individuals failed to request briefings of the dose rates in high-radiation areas before entry. The violation had very low safety significance.

Description. On December 12, 2012, one of three instruments and controls technicians received an unanticipated electronic dosimeter dose rate alarm when he/she entered a high-radiation area on the 114-foot elevation of the reactor building while performing a scram discharge volume water level channel functional test. The individual entered a dose rate of 211 millirems per hour, but had not been briefed on the dose rates in the area. The individual worked in accordance with Radiation Work Permit 20121004, Task 1, which did not allow work in high-radiation areas. A high-radiation area is an area with dose rates greater than 100 millirems per hour at 30 centimeters from the source of the radiation. The occurrence was documented in Condition Report 2012-07643. Licensee personnel reviewed the occurrence and determined job site reviews and peer checking of the work area failed to note the high-radiation area enclosing the work area. Neither the workers or the radiation protection personnel questioned the use of Task 1. As corrective action, licensee personnel enhanced the training for new nuclear workers and revised the surveillance procedure used by the instruments and controls technicians for this particular functional test to add a precaution that this level switch was in a high-radiation area.

On February 21, a worker received an unanticipated electronic dosimeter dose rate alarm on the 141-foot elevation of the drywell. The individual entered a dose rate of 453 millirems per hour, but had only been briefed for a dose rate of 40 millirems per hour on the 95-foot elevation of the drywell, according to licensee personnel. The individual worked in accordance with Radiation Work Permit 20131932, Task 1. The dose rate setpoint was 300 millirems per hour. The occurrence was documented in Condition Report 2013-01275. The worker's access to the radiological controlled area was restricted and the worker was coached on the proper practice. Licensee personnel investigated the occurrence and found that the worker was redirected by his/her supervisor to another location and the worker did not self-check and request another briefing. The worker and supervisor were coached on acceptable radiation work practices.

Analysis. The failure to request briefings of the dose rates in high-radiation areas before entry is a performance deficiency. The requirement not met was Technical Specification 5.7.1. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the work practices component, because licensee personnel failed to use human error prevention techniques, such as self- and peer-checking, commensurate with the risk of the assigned task such that work activities were performed safely [H.4(a)].

Enforcement. Technical Specification 5.7.1 requires individuals entering an area with radiation dose rates greater than 100 millirems per hour be aware of the dose rates prior to entry. Contrary to the above, licensee personnel entered areas with radiation dose rates greater than 100 millirems per hour without being aware of the dose rates. Specifically, on December 12, 2012, an individual entered an area with a dose rate of 211 millirems per hour on the 114-foot elevation of the reactor building without being briefed on dose rates in the area. On February 21, an individual entered an area on the 141-foot elevation of the drywell with a dose rate of 453 millirems per hour, but had only been briefed for a dose rate of 40 millirems per hour on the 95-foot elevation of the drywell. The workers were coached on the acceptable radiation protection practice and training content was enhanced as determined appropriate by the licensee. This violation was 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 Condition Reports CR-RBS-2012-07643 and CR-RBS-2013-01275. (NCV 05000458/2013002-02, "Failure to Request Briefings of the Dose Rates in High-Radiation Areas Before Entry")

## .2 Failure of a Radiation Protection Technician to Provide Adequate Job Coverage

Introduction. The inspectors reviewed a self-revealing, non-cited green, violation of Technical Specification 5.7.1 that resulted because a radiation protection technician failed to provide adequate job coverage. The violation had very low safety significance.

Description. On January 25, an operator and a radiation protection technician entered the offgas recombiner room on the 123-foot elevation of the turbine building. The area was controlled as a locked high-radiation area, an area with dose rates greater than 1000 millirems per hour at 30 centimeters from the source of the radiation. The radiation protection technician's responsibility was to perform radiation surveys, determine dose rates in the area, and inform the operator before the operator entered the area, as required by Technical Specification 5.7.1.b and to provide positive control over activities within the area, as required by Technical Specification 5.7.1.c. However, the radiation protection technician did not provide positive control until he/she determined the dose rates in the area, and both the individuals entered the offgas combiner room and received unanticipated electronic dosimeter alarms. The radiation protection technician's dosimeter indicated a maximum dose rate of 1,190 millirems per hour and the operator's dosimeter indicated a maximum dose rate of 1,350 millirems per hour. Licensee personnel documented the occurrence in Condition Report 2013-00479 and performed an investigation. They determined the radiation protection technician did not extend the extendable radiation survey instrument because he/she did not expect to see dose rates as high as were encountered. The radiation protection technician did not instruct the operator to stay at the entryway until dose rates were determined. Licensee representatives concluded the radiation protection technician was overconfident regarding the coverage and did not expect to see dose rates higher than 500 millirems per hour. Also, the radiation protection technician did not communicate to the operator to ensure the operator waited until the dose rates were determined before entering.

Analysis. The failure to provide adequate radiation protection job coverage was a performance deficiency. The requirement not met was Technical Specification 5.7.1. The significance of the performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed workers to higher than anticipated radiation dose rates. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the decision making component, because licensee personnel did not make a risk-significant decision using a systematic process when faced with uncertain or unexpected plant conditions [H.1(a)].

Enforcement. Technical Specification 5.7.1 requires individuals entering an area with radiation dose rates greater than 100 millirems per hour enter into such areas after the personnel are aware of the dose rates. Contrary to the above, licensee personnel entered an area with radiation dose rates greater than 100 millirems per hour without being aware of the dose rates. Specifically, on January 25, an operator and a radiation protection technician entered the offgas recombiner room on the 123-foot elevation of the turbine building, an area with dose rates of 1190 to 1350 millirems per hour, without being aware of the dose rates in the area. This violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy, because it was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-RBS-2013-00479 to address recurrence (NCV 05000458/2013002-03, "Failure of a Radiation Protection Technician to Provide Adequate Job Coverage").

## **2RS2 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/postjob 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

Introduction. The inspectors reviewed a self-revealing, Green finding associated with the licensee's failure to provide adequate procedures for installing a seal on reactor water cleanup (RWCU) 'A' pump. The finding had very low safety significance.

Description. On December 4, 2011, while adding oil to the RWCU 'A' pump (G33-PC001A), licensee personnel identified seal leakage at a rate of approximately one quart per minute. Several days later, the licensee identified a rise in the leak rate to about 0.5 gallons per minute. On January 3, 2012, the licensee initiated another work order request and properly replaced the pump seal with vendor oversight.

To install the new seal, mechanics followed the installation procedure provided to them in work order 180842. That work order directed the workers to install the seal into a blind gland after the impeller nut was installed and fully torqued. However, it did not require the workers to ensure that the seal was fully inserted prior to torquing the impeller nut, and installing the impeller and impeller nut prior to ensuring that the seal was fully inserted allowed the seal cartridge to rotate during the torquing steps which mispositioned the anti-rotation pin in relation to the pin guide. This rotation ultimately bent the anti-rotation pin and dislodged the pin from the machined guide. Once the pin was deformed, it caused the mating surfaces of the sealing faces to shift, resulting in a gap that allowed the seal to leak. That leak prompted licensee personnel to rework the seal replacement on January 3, 2012 with vendor oversight.

The licensee used Radiation Work Permit (RWP) 2011-1096 and RWP 2012-1096 to perform this work. The original dose estimate was 3.871 person-rem. However, because of the re-work, a total of 6.343 person-rem was accrued for both seal installations in December 2011 and January 2012.

The licensee's apparent-cause evaluation of this incident is documented in condition report CR-RBS-2011-09015, which determined that the work instructions had inappropriately delayed verification of the seal installation until after the impeller and impeller nut was installed and fully torque. In that condition report, the licensee developed corrective actions to "Revise all RWCU procedures and model work orders to verify seal engagement prior to torquing the impeller nut."

The inspector therefore determined that the increased collective dose was due to the licensee's failure to provide adequate work instructions for installing RWCU pump seals. That failure was inconsistent with licensee expectations described in maintenance Procedure EN-MA-101, "Fundamentals of Maintenance," Revision 13, which states, in part, that maintenance personnel are expected to accomplish assigned work with the highest quality, striving to do it right the first time.

Analysis. The failure to provide adequate work instructions for installing RWCU pump seals is a performance deficiency with respect to the licensee's expectations described in Procedure EN-MA-101. The performance deficiency was more-than-minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and affected the cornerstone objective, in that it caused increased collective radiation dose for occupational workers. Additionally, the finding was similar to example 6(i) in Appendix E to Manual Chapter 0612, "Power Reactor Inspection Reports – Examples of Minor Issues." This example states that an issue is more-than-minor if it results in a collective dose greater than 5 person-rem, and the actual dose exceeds the estimated dose by greater than 50 percent. Using Manual Chapter 0609, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding had very low safety significance because, although the finding involved ALARA planning and work controls, the licensee's latest three-year rolling average collective dose was less than 240 person-rem. This finding had a cross-cutting aspect in the human performance area, associated with the resources component, because the licensee failed to use complete, accurate, and up-to-date procedures and work orders to perform the seal installation, which resulted in unnecessary dose [H.2(c)].

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. Because this finding does not involve a violation and is of very low safety significance, it is identified as a finding (FIN 05000458/2013002-04, "Failure to Provide Adequate Work Instructions for Installing Reactor Water Cleanup Pump Seals").

#### 4. OTHER ACTIVITIES

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

##### 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 fourth quarter 2012 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 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for the period from the first quarter 2012 through the fourth quarter 2012. 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 narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012 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 unplanned scrams per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7000 critical hours performance indicator for the period from the first quarter 2012 through the fourth quarter 2012. 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 narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012 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 unplanned power changes per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.



.4 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for the period from the first quarter 2012 through the fourth quarter 2012. 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 narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012 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 unplanned scrams with complications 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 of 2012 through the fourth quarter of 2012. 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 fourth quarter of 2012. 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.

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.

**40A5 Other Activities**

.1 (Closed) Temporary Instruction (TI) 2515/187, "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns"

a. Inspection Scope

The inspectors verified that licensee's walkdown package WP-1, "Auxiliary Building South Wall Below Elevation 96' 00" and Applicable Portions of D-Tunnel," contained the elements as specified in NEI 12-07 Walkdown Guidance document.

The inspectors accompanied the licensee on October 23, 2012 on their walkdown of the Auxiliary Building, 70 foot elevation, south wall and verified that the licensee confirmed the following flood protection features:

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed.
- Critical structures, systems, and components dimensions were measured
- Available physical margin, where applicable, was determined

- Flood protection feature functionality was determined using either visual observation or by review of other documents

The inspectors independently performed their walkdown of the Control Building south wall below elevation 96 foot elevation and verified that the following flood protection features were in place:

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed.
- Critical structures, systems, and components dimensions were measured
- Available physical margin, where applicable, was determined
- Flood protection feature functionality was determined using either visual observation or by review of other documents

The inspectors verified that noncompliances with current licensing requirements, and issues identified in accordance with the 10 CFR 50.54(f) letter, Item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No findings were identified.

.2 (Closed) Temporary Instruction (TI) 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns"

a. Inspection Scope

The inspectors accompanied the licensee on their seismic and area walkdowns of the standby switchgear room motor control center EHS-MCC8B in the control building 98' elevation on October 10th and 11th, 2012. The inspectors verified that the licensee confirmed that the following seismic features associated with motor control center EHS-MCC8B were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware.
- Anchorage was free of corrosion that is more than mild surface oxidation.
- Anchorage was free of visible cracks in the concrete near the anchors.
- Anchorage configuration was consistent with plant documentation.

- SSCs will not be damaged from impact by nearby equipment or structures.
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment.
- Attached lines have adequate flexibility to avoid damage.
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area.
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area.
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding).

On November 30, 2012, the inspectors independently performed walkdowns and verified all of seismic features as specified in the EPRI guidance document for the licensee's inspection of the following equipment:

- ENB-PNL02A, 125V DC Panel, Control Building 136' elevation
- SWP-AOV599, SCT Station Blackout SWP return valve, G tunnel 67' elevation
- ENB-MCC1, Motor Control Center, Aux Building 95' elevation
- ENB-INV01B, Vital Bus B Inverter, Control building 98' elevation

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation. Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the SWEL and these items were walked down by the licensee.

b. Findings

No NRC-identified or self-revealing findings were identified.

.3 Temporary Instruction (TI) 2515/182, "Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping and Tanks"

a. Inspection Scope

The licensee's buried piping and underground piping and tanks program was inspected in accordance with paragraphs 03.01.a through 03.01.c of the TI and was found to meet all applicable aspects of NEI 09-14, Revision 1, as set forth in Table 1 of the TI.

b. Findings

No findings were identified.

**40A6 Meetings, Including Exit**

Exit Meeting Summary

On March 1, the inspectors presented the results of the radiation safety inspections to Mr. Eric Olson, Site Vice President, 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. The inspectors conducted subsequent discussions with licensee personnel concerning changes in the characterization of a finding, concluding with a telephone conversation with Ms. K. Huffstatler, Senior Licensing Specialist, on April 3.

On March 19, the inspector presented the inspection results of the review of inservice inspection activities to Mr. J. Roberts, Director, Nuclear Safety Assurance, and other members of the licensee staff. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On April 4, the inspectors presented the integrated inspection results to Mr. Eric Olson, Site Vice President, 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**

S. Barkowski, Quality Assurance  
J. Boulanger, Manager, Maintenance  
M. Briley, Engineering  
D. Burnett, Manager, Emergency Preparedness  
G. Bush, Manager, Material, Procurement, and Contracts  
M. Chase, Manager, Training  
J. Clark, Manager, Licensing  
C. Coleman, Manager, Engineering Programs & Components  
F. Corley, Manager, Design Engineering  
R. Creel, Superintendent, Plant Security  
T. Evans, Manager, Operations  
M. Feltner, Manager, Production  
A. Fredieu, Manager, Outage  
R. Gadbois, General Manager, Plant Operations  
T. Gates, Assistant Operations Manager - Shift  
K. Hallaran, Manager, Chemistry  
D. Hebert, Engineering  
K. Huffstatler, Senior Licensing Specialist  
B. Kienlen, Engineering  
G. Krause, Assistant Operations Manager – Training  
P. Lucky, Manager, Corrective Actions and Assessments  
J. Maher, Manager, System Engineering  
W. Mashburn, Director, Engineering  
D. Moore, Corporate Manager, Radiation Protection  
E. Neal, Superintendent, Radiation Protection  
E. Olson, Site Vice President  
J. Roberts, Director, Nuclear Safety Assurance  
T. Santy, Manager, Security  
T. Shenk, Assistant Operations Manager – Support  
J. Vukovics, Supervisor, Reactor Engineering  
J. Wieging, Manager, Planning and Scheduling, Outages  
L. Woods, Manager, Quality Assurance

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

2515/182	TI	Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping and Tanks
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### Opened and Closed

05000458/2013002-01	NCV	Failure to Monitor the Performance of the Floor and Equipment Drains System (Section 1R12)
05000458/2013002-02	NCV	Failure to Request Briefings of the Dose Rates in High-Radiation Areas Before Entry (Section 2RS1)
05000458/2013002-03	NCV	Failure of a Radiation Protection Technician to Provide Adequate Job Coverage
05000458/2013002-04	FIN	Failure to Properly Perform a Maintenance Activity (2RS2)

### Closed

2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns
2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

## LIST OF DOCUMENTS REVIEWED

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

#### CONDITION REPORTS

CR-RBS-2012-03852   CR-RBS-2013-01570   CR-RBS-2013-01581

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AOP-0029	Severe Weather Operation	028
AOP-0029	Severe Weather Operation	029
AOP-0029	Severe Weather Operation	030



**Section 1R04: Equipment Alignment**

CONDITION REPORTS

CR-RBS-2013-02072    CR-RBS-2013-02089    CR-RBS-2013-02186

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SOP-0031	Residual Heat Removal (SYS #204)	316
SOP-0091	Fuel Pool Cooling and Cleanup (SYS #602)	046

**Section 1R05: Fire Protection**

CALCULATION

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
G13.18.12.2-022	River Bend Station – Combustible Loading	4

CONDITION REPORTS

CR-RBS-2013-00165    CR-RBS-2013-00167    CR-RBS-2013-00169    CR-RBS-2013-00190  
CR-RBS-2013-00192    CR-RBS-2013-00193    CR-RBS-2013-00198    CR-RBS-2013-00203  
CR-RBS-2013-00204    CR-RBS-2013-00205    CR-RBS-2013-00323    CR-RBS-2013-00407  
CR-RBS-2013-00819

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FPP-0020	Guidelines for Preparation of Pre-Fire Strategies and Pre-Fire Plans	10
RB-095-001	Recirculation Pump Area Fire Area RDW-1	3
STP-000-3601	Inaccessible Fire Barrier Outage Inspection	2

**Section 1R07: Heat Sink Performance**

CONDITION REPORT

CR-RBS-2012-07040

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
Holtec Report No. HI-931083	Validation Manual for Computer Code ST_XPERT	3
Reference Manual 00809-0100-4101	Rosemount 2051 Pressure Transmitter with 4-20 mA HART and 1-5 Vdc Low Power Protocol	AA / July 2008
Product Data Sheet 00813-0100-4360	Rosemount 1151 Pressure Transmitter	JB / March 2010
TIN No. 2000-1145	Test Protocol Entergy River Bend Station Residual Heat Removal Heat Exchangers Prepared by Power Generation Technologies	0

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
OSP-0068	Critical Decision Process	001
OSP-0068, Attachment 1	Division II Residual Heat Removal (RHR) Heat Exchangers (Hxs): Inspection, Cleaning, and Testing- Critical Decision Screening Document	December 20, 2012
SEP-HX-RBS-001	Service Water Heat Exchanger Inspections	1
SEP-HX-RBS-002	Performance Monitoring Program for the Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (DIV II)	5
SOP-0031	Residual Heat Removal (SYS #204)	316

**Section 1R08: Inservice Inspection Activities**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
CEP-COS-0110	Control and Use of the ScheduleWorks Module of IDDEAL Software	308
CEP-ISI-100	ASME Section XI, Division 1, Fleet Administrative Controls for Inservice Inspection Program	0
CEP-NDE-0400	Ultrasonic Examination	3
CEP-NDE-0423	Manual Ultrasonic Examination of Austenitic Piping Welds	5

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	(ASME XI)	
CEP-NDE-0641	Liquid Penetrant Examination (PT) for ASME Section XI	7
CEP-NDE-0731	Magnetic Particle Examination (MT) for ASME Section XI	3
CEP-NDE-0901	VT-1 Examination	4
CEP-NDE-0903	VT-3 Examination	5
EN-DC-120	Engineering Code Programs	1
EN-FAP-OU-100	Refueling Outage Preparation and Milestones	4
SEP-ISI-103	Program Section for ASME Code, Section XI, Division 1 Inservice Inspection (ISI) Program	0
CEP-WP-003	Qualification and Control of Welders	2
CEP-WP-004	Control and Documentation of Welding Activities	2
CEP-WP-GWS-1	General Welding Standard ASME/ANSI	2
CEP-WP-GWS-2	General Welding Standard Structural Steel AWS D1.1	2
CEP-WP-PHT-1	Preheat and Postweld Heat Treatment Requirements	2
CEP-WP-WIIR-1	Weld Inprocess Inspection Requirements	2
CEP-WP-002	Qualification, Development, and Control of Welding Procedure Specifications	1
CEP-WP-005	Control and Issuance of Welding Material	1
CEP-WP-006	Review and Approval of Vendor Welding Programs	1
CEP-WP-IGP-1	Internal Gas Purging	1

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
RBG-46922	Request for Alternative – Implementation of a Risk-	June 16, 2009

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	Informed Inservice Inspection Program Based on ASME Code Case N-716	
RGB-46977	Request for Alternative RBS-ISI-015 Proposed Alternative to 10CFR50.55a Examination Requirements for Reactor Pressure Vessel Weld Inspections	November 30, 2009
LO-RLO-2011-00108	Focused Self-Assessment Report - ASME Code, Section XI Containment Inservice Inspection (CISI) and Inservice Inspection (ISI) Programs	July 12, 2012
+LO-RLO-2010-00087	Welding Program Focused Self Assessment	November 22, 2011
INR RBS R17 IVVI-13-01	Steam Dryer Support Ring Indication Notification Report	February 19, 2013
INR RBS R17 IVVI-13-02	Feedwater Sparger End Pins Indication Notification Report	February 25, 2013
G13.18.10.2-261	Determination of Acceptable Minimum Wall Thickness of Piping Components for RF15 (Calculation)	0

CONDITION REPORTS

2009-5253	2011-0441	2011-0443	2011-0729	2011-0885
2011-1105	2011-1193	2011-1344	2011-1518	2011-1660
2011-0052	2009-04488	2011-00491		

WORK ORDERS

WO 213800	WO 213802	WO 218494	WO-289615	WO-272621
WO-287361				

**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-0001	Control of Operator Aids	013
OSP-0027	Log Report – Main Control Room	029

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-0046	Operations Notifications	010
TPP-7-008	SRO/RO Simulator Certification Program	5

TRAINING PROGRAM DOCUMENT

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
RSMS-OPS-0657.00	Simulator Scenario – Plant SU / MSR Failure / ATWS	0

**Section 1R12: Maintenance Effectiveness**

CONDITION REPORTS

CR-RBS-1994-00897	CR-RBS-1994-01291	CR-RBS-2009-00807	CR-RBS-2009-00937
CR-RBS-2009-01062	CR-RBS-2009-01751	CR-RBS-2009-04386	CR-RBS-2009-04728
CR-RBS-2009-05361	CR-RBS-2009-06512	CR-RBS-2010-00665	CR-RBS-2010-00849
CR-RBS-2010-00989	CR-RBS-2010-01076	CR-RBS-2010-01100	CR-RBS-2010-01119
CR-RBS-2010-01647	CR-RBS-2010-02054	CR-RBS-2010-02110	CR-RBS-2010-02112
CR-RBS-2010-02496	CR-RBS-2010-02560	CR-RBS-2010-02851	CR-RBS-2010-03119
CR-RBS-2010-03351	CR-RBS-2010-03879	CR-RBS-2010-04852	CR-RBS-2010-05304
CR-RBS-2010-05306	CR-RBS-2011-00315	CR-RBS-2011-02411	CR-RBS-2011-03701
CR-RBS-2011-03853	CR-RBS-2011-04011	CR-RBS-2011-04081	CR-RBS-2011-04383
CR-RBS-2011-04401	CR-RBS-2011-04480	CR-RBS-2011-04685	CR-RBS-2011-04798
CR-RBS-2011-05938	CR-RBS-2011-06021	CR-RBS-2011-06163	CR-RBS-2011-07927
CR-RBS-2011-08394	CR-RBS-2011-08454	CR-RBS-2011-08464	CR-RBS-2012-00997
CR-RBS-2012-01490	CR-RBS-2012-01587	CR-RBS-2012-01967	CR-RBS-2012-03199
CR-RBS-2012-03277	CR-RBS-2012-03854	CR-RBS-2012-04349	CR-RBS-2012-04436
CR-RBS-2012-04463	CR-RBS-2012-04717	CR-RBS-2012-04988	CR-RBS-2012-05084
CR-RBS-2012-05329	CR-RBS-2012-05581	CR-RBS-2012-05704	CR-RBS-2012-06982
CR-RBS-2012-07096	CR-RBS-2012-07100	CR-RBS-2012-07776	CR-RBS-2013-00295

ENGINEERING REPORT

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
RBS-SE-11-00001	Maintenance Rule Program 2009-10 (a) (3) Periodic Assessment	000

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	RBS Maintenance Rule Reliability and Availability	December 31, 2012

MISCELLANEOUS

NUMBER

TITLE

DATE

Sheet

WORK ORDERS

WO 00102849	WO 00209749	WO 00210003	WO 00211412
WO 00281423	WO 00295552	WO 00311183	WO 00312410
WO 00315902	WO 00317915	WO 00330014	

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

CONDITION REPORTS

CR-RBS-2012-02479   CR-RBS-2013-00282   CR-RBS-2013-00745   CR-RBS-2013-00824

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-0048	Switchyard, Transformer Yard and Sensitive Equipment Controls	018
RBNP-061	Vehicular Traffic Control Plan	0B
SOP-0055	Main and Station Transformers (SYS #311)	028

**Section 1R15: Operability Evaluations and Functionality Assessments**

CALCULATION

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
G13.18.2.1	Control Building Minimum Zone Temperatures Normal Operation	1

CONDITION REPORTS

CR-RBS-2001-01510	CR-RBS-2007-03766	CR-RBS-2007-03791	CR-RBS-2008-02410
CR-RBS-2008-03083	CR-RBS-2011-01171	CR-RBS-2012-07027	CR-RBS-2012-07135
CR-RBS-2012-07395	CR-RBS-2012-07400	CR-RBS-2012-07401	CR-RBS-2012-07402
CR-RBS-2012-07411	CR-RBS-2012-07412	CR-RBS-2012-07414	CR-RBS-2012-07422
CR-RBS-2012-07428	CR-RBS-2012-07429	CR-RBS-2012-07430	CR-RBS-2012-07439
CR-RBS-2012-07451	CR-RBS-2012-07480	CR-RBS-2012-07484	CR-RBS-2012-07499
CR-RBS-2012-07551	CR-RBS-2012-07567	CR-RBS-2012-07585	CR-RBS-2012-07586
CR-RBS-2012-07588	CR-RBS-2012-07594	CR-RBS-2012-07595	CR-RBS-2012-07621
CR-RBS-2013-00560	CR-RBS-2013-02332		

NRC DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
IV-12-053	NRC Begins Special Inspection at River Bend Nuclear Plant	December 14, 2012
Memorandum	Management Directive 8.3 Evaluation of a Piping Failure Associated with an Emergency Diesel Generator at the River Bend Station	December 14, 2012
Memorandum	Special Inspection Charter – Review of a Piping Failure Associated with an Emergency Diesel Generator at the River Bend Station	December 14, 2012

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ARP-877-32	P877-32 Alarm Response	021
OSP-0049	CRD Exercising in Mode 3, 4, or 5	5
OSP-0065	CRD Performance Testing	9
STP-052-0101	Fully Withdrawn Control Rod Insertion Operability Check	16
STP-052-0102	Partially Withdrawn Control Rod Insertion Operability Check	07
STP-052-3701	Control Rod Scram Testing	28
STP-055-0702	Refuel Platform Hoist Operability	020
STP-309-0206	Division I Diesel Generator 184 Day Operability Test	021

SPECIFICATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
221.720	Fuel Building Bridge Crane	July 20, 1973
251.120	Miscellaneous Lifting Equipment	March 21, 1981

SYSTEM DESIGN CRITERIA DOCUMENT

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
309 (DIV I & II)	Standby Diesel Generator Division I & II Diesel Generator Building Ventilation System - System Design Criteria System Numbers 309 & 405	3

WORK ORDERS

WO 00144886                      WO 00262997

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

CONDITION REPORTS

CR-RBS-2013-00436    CR-RBS-2013-00458

LICENSEE EVENT REPORT

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
2012-005-00	Grand Gulf Nuclear Station, Unit 1 – Average Power Range Monitors Inoperable in Excess of Technical Specification Allowances in Mode 2	August 13, 2012

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
Metrex Manual D214A	Installation, Operation, and Maintenance of 4"-150 lb. Flow Regulating Valves for Entergy Operations, Inc. River Bend Station – Unit 1	A

**Section 1R20: Refueling and Other Outage Activities**

CONDITION REPORTS

CR-RBS-2012-00598	CR-RBS-2013-00225	CR-RBS-2013-00301	CR-RBS-2013-00745
CR-RBS-2013-00869	CR-RBS-2013-00946	CR-RBS-2013-01007	CR-RBS-2013-01058
CR-RBS-2013-01063	CR-RBS-2013-01105	CR-RBS-2013-01123	CR-RBS-2013-01249
CR-RBS-2013-01268	CR-RBS-2013-01274	CR-RBS-2013-01307	CR-RBS-2013-01317
CR-RBS-2013-01330	CR-RBS-2013-01357	CR-RBS-2013-01364	CR-RBS-2013-01365
CR-RBS-2013-01380	CR-RBS-2013-01387	CR-RBS-2013-01405	CR-RBS-2013-01495
CR-RBS-2013-01497	CR-RBS-2013-01512	CR-RBS-2013-01581	CR-RBS-2013-01621
CR-RBS-2013-01631	CR-RBS-2013-01635	CR-RBS-2013-01638	CR-RBS-2013-01653
CR-RBS-2013-01661	CR-RBS-2013-01662	CR-RBS-2013-01675	CR-RBS-2013-01682
CR-RBS-2013-01685	CR-RBS-2013-01686	CR-RBS-2013-01692	CR-RBS-2013-01701
CR-RBS-2013-01702	CR-RBS-2013-01716	CR-RBS-2013-01719	CR-RBS-2013-01731
CR-RBS-2013-01739	CR-RBS-2013-01742	CR-RBS-2013-01745	CR-RBS-2013-01751
CR-RBS-2013-01757	CR-RBS-2013-01759	CR-RBS-2013-01770	CR-RBS-2013-01771
CR-RBS-2013-01800	CR-RBS-2013-01804	CR-RBS-2013-01815	CR-RBS-2013-01816
CR-RBS-2013-01825	CR-RBS-2013-01826	CR-RBS-2013-01827	CR-RBS-2013-01836
CR-RBS-2013-01838	CR-RBS-2013-01841	CR-RBS-2013-01855	CR-RBS-2013-01862
CR-RBS-2013-01871	CR-RBS-2013-01881	CR-RBS-2013-01882	CR-RBS-2013-01891



CR-RBS-2013-01893	CR-RBS-2013-01901	CR-RBS-2013-01904	CR-RBS-2013-01913
CR-RBS-2013-01919	CR-RBS-2013-01921	CR-RBS-2013-01968	CR-RBS-2013-02025
CR-RBS-2013-02035	CR-RBS-2013-02041	CR-RBS-2013-02066	CR-RBS-2013-02069
CR-RBS-2013-02102	CR-RBS-2013-02105	CR-RBS-2013-02182	CR-RBS-2013-02192
CR-RBS-2013-02218	CR-RBS-2013-02237	CR-RBS-2013-02266	CR-RBS-2013-02332

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
---	Outage Risk Assessment Team RF-17 Outage Report	January 6, 2013
EN 48785	Reactor Plant Event Notification Worksheet	February 26, 2013

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-IS-111	General Industrial Safety Requirements	12
GOP-0002	Power Decrease/Plant Shutdown	064
GOP-0003	Scram Recovery	022
OSP-0033	Operations with a Potential to Drain the Reactor Vessel/Cavity	009
OSP-0037	Shutdown Operations Protection Plan (SOPP)	030
OSP-0041	Alternate Decay Heat Removal	304
STP-055-0702	Refuel Platform Hoist Operability	019

**Section 1R22: Surveillance Testing**

CONDITION REPORTS

CR-RBS-2011-00359	CR-RBS-2011-00557	CR-RBS-2011-02067	CR-RBS-2011-05735
CR-RBS-2011-07572	CR-RBS-2011-07905	CR-RBS-2012-06694	CR-RBS-2013-01010
CR-RBS-2013-01048	CR-RBS-2013-01052	CR-RBS-2013-01053	CR-RBS-2013-01058
CR-RBS-2013-01105	CR-RBS-2013-01557	CR-RBS-2013-01923	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ADM-0015	Station Surveillance Test Program	037
OSP-0047	Local Leak Rate Testing Implementation	007
STP-053-3001	Jet Pump Operability Test	020

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
STP-209-0201	RCIC Discharge Piping Fill and Valve Lineup Verification	012
STP-209-6310	RCIC Quarterly Pump and Valve Operability Test	038
STP-256-6305	Div I Standby Service Water Quarterly Valve Operability Test	010
STP-309-0601	Division I ECCS Test	043
STP-403-0603	Division I Standby Gas Treatment System Functional Test	007
TSP-0021	Containment Atmosphere Monitoring System Leak Test	6

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
---	Emergency Plan	38 and 39
EIP-2-001	Classification of Emergencies	24

**Section 1EP6: Drill Evaluation**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EIP-2-001	Classification of Emergencies	024
EIP-2-002	Classification Actions	30
EIP-2-006	Notifications	40
EIP-2-102	Training, Drills, and Exercises	25

**Section 2RS1: Radiological Hazard Assessment and Exposure Controls**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-RP-121	Radioactive Material Control	7
EN-RP-122	Alpha Monitoring	7
EN-RP-141	Job Coverage	5

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-RP-143	Source Control	9
RP-100	Radiation Worker Expectations	7
RP-101	Access Control for Radiologically Controlled Areas	7
RP-102	Radiological Control	3
RP-105	Radiological Work Permits	12
RP-108	Radiation Protection Posting	12

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
LO-RLO-2012-79	Self-Assessment: Radiation Protection Program Review	December 27, 2012

CONDITION REPORTS

2012-07652	2012-04566	2012-07144	2012-07643	2012-07824
2012-07835	2013-05844	2013-00479		

RADIATION WORK PERMITS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
20121004	General Maintenance Activities	01
20131212	Ops & RP LHRA Inspections and Tours	00
20131932	RF-17 Drywell Snubber Activities	00

RADIATION SURVEY RECORDS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
RBS-1212-0119	Reactor Building – 114' Elevation	December 13, 2012
RBS-1302-0701	Drywell – 141' Elevation – E22 AOVF005	February 21, 2013
RBS-1301-0430	Offgas – 123' Elevation - Recombiner Room	January 25, 2012

**Section 2RS2: Occupational ALARA Planning and Controls**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ADM-0046	Temporary Shielding Control Program	10
EN-OE-100	Operating Experience Program	18

## PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-RP-100	Radiation Worker Expectations	7
EN-RP-101	Access Control for Radiologically Controlled Areas	7
EN-RP-102	Radiological Control	3
EN-RP-105	Radiological Work Permits	12
EN-RP-110	ALARA Program	10
EN-RP-110-03	Collective Radiation Exposure (CRE) Reduction Guidelines	2
EN-RP-110-05	ALARA Planning and Controls	1
EN-RP-110-06	Outage Dose Estimating and Tracking	1
EN-RP-121	Radioactive Material Program	7
EN-WM-105	Planning	10
EN-MA-101	Fundamentals of Maintenance	13

## AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
QS-2012-RBS-012	Second QA Follow-Up Surveillance of Two Quality Assurance Findings from the 2011 Radiation Protection (RP) / Radwaste Audit	April 19, 2012
LO-RLO-2011-00162	Snapshot Assessment/Benchmarking: Emergent Dose Reduction	August 29, 2012
LO-RLO-2012-00079	Focused Self Assessment: Radiation Protection at River Bend Station	December 27, 2012

## CONDITION REPORTS

2011-08632	2011-08802	2011-08937	2011-08941	2012-00022
2012-01039	2012-01946	2012-02339	2012-03510	2012-03926
2012-04036	2012-04095	2012-04106	2012-06198	2012-06584
2012-06673	2012-07162	2013-00150	2013-00811	2011-09015

RADIATION WORK PERMIT PACKAGES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
20111096	Replace RWCU Pump Seal on G33-PC001A	0
20121056	Steam Affected Areas, Investigation and Repairs in LHRAs	3
20121096	Replace RWCU Pump Seal on G33-PC001A	3
20121107	IFTS Underwater Work	3
20121304	Forced Outage Minor Maintenance in the Drywell	3

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	2012 RBS Exposure Recovery Plan	October 16, 2012
	River Bend Station 5-Year Exposure Reduction Plan 2012-2016	0
DW-6	Temporary Shielding Request for LPRM/IRM/CRDM EL '82 Outage Room and Shadow Shielding	May 15, 2012
DW-1	Temporary Shielding Request on 'A' and 'B' Recirc Suction and Discharge Horizontal Piping	May 15, 2012
RB-1	Temporary Shielding Request on RWCU Horizontal Piping	May 15, 2012
	Apparent Cause Evaluation Report, "Reactor Water Cleanup Seal Failure Following Maintenance"	January 24, 2012
	RWCU Pump 'A' Timeline	March 8, 2013

**Section 40A1: Performance Indicator Verification**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-LI-114	Performance Indicator Process	6

**Section 40A5: Other Activities**

CONDITION REPORTS

CR-RBS-2011-06331	CR-RBS-2012-00877	CR-RBS-2012-06236	CR-RBS-2012-06237
CR-RBS-2012-06238	CR-RBS-2012-06241	CR-RBS-2012-06242	CR-RBS-2012-06311
CR-RBS-2012-06312	CR-RBS-2012-06313	CR-RBS-2012-06323	CR-RBS-2012-06352
CR-RBS-2012-06387	CR-RBS-2012-06391	CR-RBS-2012-06399	CR-RBS-2012-06400
CR-RBS-2012-06426	CR-RBS-2012-06444	CR-RBS-2012-06446	CR-RBS-2012-06483
CR-RBS-2012-06485	CR-RBS-2012-06525	CR-RBS-2012-06526	CR-RBS-2012-06664
CR-RBS-2012-06703	CR-RBS-2012-06704	CR-RBS-2012-06706	CR-RBS-2012-06760
CR-RBS-2012-06764	CR-RBS-2012-06847	CR-RBS-2012-06866	CR-RBS-2012-06869
CR-RBS-2012-06876	CR-RBS-2012-06877	CR-RBS-2012-06878	CR-RBS-2012-06879
CR-RBS-2012-06880	CR-RBS-2012-06957	CR-RBS-2012-07090	CR-RBS-2012-07175
CR-RBS-2012-07178	CR-RBS-2012-07582	CR-RBS-2013-00721	CR-RBS-2013-00868
CR-RBS-2013-00946	CR-RBS-2013-01010	CR-RBS-2013-01048	CR-RBS-2013-01052
CR-RBS-2013-01053	CR-RBS-2013-01056	CR-RBS-2013-01058	CR-RBS-2013-01105
CR-RBS-2013-01123	CR-RBS-2013-01148	CR-RBS-2013-01149	CR-RBS-2013-01150
CR-RBS-2013-01151	CR-RBS-2013-01154	CR-RBS-2013-01167	CR-RBS-2013-01179
CR-RBS-2013-02310			

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EC-058A 0	FND PLAN EL 70'-0" OUTLINE CTRL BLDG	010
EC-058P 0	NORTH & SOUTH WALL ELS CTRL BLDG	009
EC-066A	FDN PLAN EL 70'-0" OUTLINE AUX BLDG	007
EE-037C 0	ARRGT INSERTS SLVS & OPENINGS CTRL BLDG	008
EE-037S	ARRGT SLVS, INSERTS&OPNGAUX BLDG EL 70	013
EP-117A	SLV LOCN PLAN&DTLSELECTRICAL TUNNEL	008
EP-119AB	SLV LOCN-PLAN AUX BLDG	005
EP-145A	SLV LOC PLAN EL 70' & 98' CONT BLDG	009

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
---	The National Diet of Japan – The Official Report of The Fukushima Nuclear Accident Independent Investigation Commission	
---	Endorsement of Nuclear Energy Institute 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features"	May 31, 2012

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
---	Fukushima Related Inspection Activities Presentation by Robert Taylor and Tim Kobetz	June 26, 2012
---	Seismic Walkdown Planning Schedule – Week 1 10/1/2012 to 10/5/2012 and Week 2 10/8/2012 to 10/12/2012	
EPRI Report 1021561	Inspection Methodologies for Buried Piping and Tanks	August 2010
EPRI Report 1025286	Seismic Walkdown guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic	June 2012
LOCTR #1-TS-12-FB & RW FWS INOP-282	Fuel Building and Radwaste Fire Protection Impairment to Support CST Excavation Work	November 9, 2012
RBG-47304	Flooding Walkdown Report – Entergy’s Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3: of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident	0
RBG-47307	Seismic Walkdown Report – Entergy’s Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident – River Bend Station – Unit 1, Docket No. 50-458, License No. NPF-47	November 27, 2012
Specification 229.180	Floor and Wall Sleeve Seals	March 30, 1985

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
CEP-UPT-0100	Underground Piping and Tanks Inspection and Monitoring	2
EN-DC-168	Fukushima Near-Term Task Force Recommendation 2.3 Seismic Walk-down Procedure	0
EN-DC-170	Fukushima Near-Term Task Force Recommendation 2.3 Flooding Walkdown Procedure	0

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-DC-343	Underground Piping and Tanks Inspection and Monitoring Program	7
SEP-UIP-RBS	Underground Components Inspection Plan	3



**The following items are requested for the  
Occupational Radiation Safety Inspection  
at River Bend Station  
(February 25 – March 1, 2013)  
Integrated Report 2013002**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **February 8, 2013**.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 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 Natasha Greene at (817) 200-1154 or [Natasha.Greene@nrc.gov](mailto:Natasha.Greene@nrc.gov).

Currently, the other inspector will be Larry Ricketson. He may be contacted at (817) 200-1165 or [Larry.Ricketson@nrc.gov](mailto:Larry.Ricketson@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)**

Date of Last Inspection: **June 08, 2012**

- 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. Identify any CRs that are potentially related to a performance indicator event
- 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. Occupational ALARA Planning and Controls (71124.02)**

Date of Last Inspection: **March 01, 2012**

- 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

## 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.

**Information Request**  
**January 7, 2013**  
**Notification of Inspection and Request for Information**  
**River Bend Station**  
**NRC Inspection Report 05000458/2013002**

On February 15, 2013, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at River Bend Station, using NRC Inspection Procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is a resource intensive inspection both for the NRC inspectors and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. The first group (Section A of the enclosure) identified information to be provided prior to the inspection to ensure that the inspectors are adequately prepared. The second group (Section B of the enclosure) identifies the information the inspectors will need upon arrival at the site. It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Ms. Kristi Huffstatler of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: February 18, 2013

Onsite week: February 25 through March 1, 2013

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 the lead inspector Wayne Sifre at (817) 200-1193 ([wayne.sifre@nrc.gov](mailto:wayne.sifre@nrc.gov)).

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

- a) A detailed schedule (including preliminary dates) of:
  - i. Nondestructive examinations planned for ASME Code Class Components performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.
  - ii. Examinations associated with the BWRVIP program, i.e. In-Vessel Visual Inspections (IVVI).

- iii. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 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.
  - i. A list of ASME Code Cases currently being used to include the system and/or component the Code Case is being applied to.
- c) A list of nondestructive examination reports which have identified recordable or rejectable indications on any ASME Code Class components 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.
- d) A list including a brief description (e.g., system, code class, weld category, nondestructive examination performed) associated with the repair/replacement activities of any ASME Code Class component since the beginning of the last outage and/or planned this refueling outage.
- e) Copy of any 10 CFR Part 21 reports applicable to structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.
- f) A list of any temporary noncode repairs in service (e.g., pinhole leaks).
- g) Please provide copies of the most recent self-assessments for the inservice inspection and welding programs

A.2 Additional Information Related to all Inservice Inspection Activities

- a) A list with a brief description of inservice inspection, and boric acid corrosion control program related issues entered into your corrective action program since the beginning of the last refueling outage. For example, a list based upon data base searches using key words related to piping such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, or errors in piping examinations.
- b) Provide training (e.g. Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1.
- c) Please provide names and phone numbers for the following program leads:

Inservice inspection (examination, planning, BWRVIP)  
 Snubbers and supports  
 Repair and replacement program  
 Licensing  
 Site welding engineer

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (February 25, 2013):

B.1 Inservice Inspection / Welding Programs and Schedule Information

- a) Updated schedules for inservice inspection/nondestructive examination activities, including 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 welding procedures used to fabricate the welds.
  - vi. Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v.
  - vii. Copies of welder's performance qualification records (WPQ).
  - 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 radiographic testing was performed).
  - x. Copies of the preservice examination records for the selected welds.
  - xi. Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.
- c) For the inservice inspection related corrective action issues selected by the inspectors from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.
- d) For the nondestructive examination reports with relevant conditions on ASME Code Class components selected by the inspectors 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 inservice inspection program manual and plan for the current interval.
- f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide a copy of the nondestructive examination 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 nondestructive examination 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.
- b) Copy of the performance demonstration initiative (PDI) generic procedures with the latest applicable revisions that support site qualified ultrasonic examinations of piping welds and components (e.g., PDI-UT-1, PDI-UT-2, PDI-UT-3, PDI-UT-10, etc.).