



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

February 10, 2012

EA-10-095

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
05000458/2011005

Dear Mr. Olson:

On December 31, 2011, 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 January 19, 2012, 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.

Two NRC-identified findings of very low safety significance (Green) were identified during this inspection. Both were determined to involve violations of NRC requirements.

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 United States 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

Site Vice President –
Eric W. Olson

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

Vincent G. Gaddy, Branch Chief
Project Branch C
Division of Reactor Projects

Docket No.: 05000458
License No: NPF-47

Enclosure: Inspection Report 05000458/2011005
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

Site Vice President –
Eric W. Olson

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C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	C:ORA/ACES	BC:DRP/C	
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000458

License: NPF-47

Report: 05000458/2011005

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: 5485 U.S. Highway 61
St. Francisville, LA 70775

Dates: October 1 through December 31, 2011

Inspectors: G. Larkin, Senior Resident Inspector, Project Branch C
A. Barrett, Resident Inspector, Project Branch C
M. Hayes, Resident Inspector, Project Branch A
C. Osterholtz, Senior Operations Engineer, Operations Branch
D. Strickland, Operations Engineer, Operations Branch
M. Young, Reactor Inspector, Engineering Branch 1
N. Okonkwo, Reactor Inspector, Engineering Branch 2
S. Garchow, Senior Operations Engineer, Operations Branch

Approved By: Vincent G. Gaddy, Chief, Project Branch C
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000458/2011005; 10/01/2011 – 12/31/2011; River Bend Station; Integrated Resident and Regional Report; Equipment Alignments; Maintenance Effectiveness

The report covered a 3-month period of inspection by resident inspectors and four announced baseline inspections by region-based inspectors. Three Green noncited violations 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 Green non-cited violation of Technical Specification 5.4.1.a, because the station did not establish appropriate maintenance procedures to lubricate standby service water pump lower motor bearings. Specifically, the inspectors found a legacy of improper maintenance practices involving lubrication of the standby service water pump motor lower bearings going back to 1986. This included mixing of incompatible greases without change evaluations, lubrication techniques that did not comply with pump motor vendor manual or EPRI guidance, improper volume of greases added to the bearings, and improper preventive maintenance frequency for performing re-greasing of the bearings. The licensee entered this issue into the licensee's corrective action program as Condition Report CR-RBS-2011-08367.

This performance deficiency is more-than-minor and is therefore a finding because if left uncorrected, this performance deficiency has the potential to lead to a more significant safety concern. Specifically, if the subject work orders are not corrected, future work activities that grease the subject bearings in accordance with those work orders may not grease the bearings adequately, which may result in common-cause failures of the station service water pumps. Because this finding was identified while the unit was operating, the inspectors used MC 0609 Appendix A to assess its risk significance. In accordance with that Appendix, the finding screened as green (of very low safety significance) because it was not a design or qualification deficiency; it did not represent a loss of system safety function; and it did not screen as potentially risk-significant due to seismic, flooding, or severe weather initiating events. The inspectors determined that the apparent cause of this finding was failure to include the appropriate scope of information in the work instructions due to overconfidence and lack of adequate review by engineering staff. Specifically, the system

engineer who developed the revised instructions failed to develop appropriate steps with adequate detail to appropriately perform the task and the field engineer failed to stop work and discuss the issue with the system engineer that developed the work instructions. Therefore, the finding has a crosscutting aspect in the area of human performance associated with work practices, because engineering personnel failed to use the applicable human error prevention techniques [H.4(a)]. (Section 1R04)

- Green. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(2) involving the failure to adequately monitor the performance of the control building chilled water system. Specifically, the inspectors determined that the station had failed to track system unavailability following the system's classification of a high risk system and did not monitor the system at the train level, ultimately masking the performance of individual trains. The licensee entered this issue into the licensee's corrective action program as Condition Report CR-RBS-2011-07332.

The finding was more than minor since violations of 10 CFR 50.65(a)(2) necessarily involve degraded system performance which, if left uncorrected, could become a more significant safety concern. This finding has very low safety significance because the finding did not lead to an actual loss of safety function of the system or cause a component to be inoperable, nor did it screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined the cause of the finding was the lack of management oversight. Following the issuance of River Bend Station Probabilistic Risk Assessment interim Revision 4a, several personnel functioned as the maintenance rule coordinator and control building chilled water system engineer. During this period, station management did not ensure sufficient knowledge transfer for effective maintenance rule implementation. Therefore, this finding has a cross-cutting aspect in the human performance area associated with the resources component because the licensee failed to ensure supervisory and management oversight of work activities such that nuclear safety is supported [H.4(c)] (Section 1R12).

- **B. Licensee-Identified Violations**

None

REPORT DETAILS

Summary of Plant Status

River Bend Station began the inspection period at 100 percent rated thermal power. On December 15, 2011, the plant reduced reactor power to 61 percent to perform a control rod sequence exchange. The plant returned to full power on December 17, 2011. On December 23, 2011, an unplanned reactor scram occurred due to a turbine trip. The plant commenced a startup on December 27, 2011. The plant returned to full power on December 30, 2011, and 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 Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of the adverse weather procedures for seasonal extreme low temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes, and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

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

- Standby Service Water Cooling Tower

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

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- Control rod drive Train A during planned maintenance on Train B
- Division 1 diesel generator with Division 2 out of service during surveillance testing

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 two partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 16, 2011, the inspectors performed a complete system alignment inspection of the standby service water system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups,

electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a, because the station did not establish appropriate maintenance procedures to lubricate standby service water pump lower motor bearings.

Description. The standby service water system at River Bend Station is required to provide cooling water to remove heat from unit auxiliaries, such as residual heat removal system heat exchangers, standby diesel generator, and room coolers for emergency core cooling system equipment required for safe reactor shutdown following a design basis accident or transient. On November 16, 2011, the inspectors observed grease dripping from the standby service water pump A, B, C, and D lower motor bearing housing onto the motor to pump coupling and splattered remains on the motor mount. The inspectors were concerned that grease leaking from the bearing seal is contrary to normal operations. The inspectors reviewed the motor's purchase specification number 232.920, "Standby Service Water Pumps ASME Code, Section III, Class 3." According to the motor purchase specification, the bearings were purchased specifically to be "sealed against the entrance of dirt and the escapement of the lubricant." The inspectors researched the lubrication history of the standby service water pump motors and found a legacy of issues involving lubrication instructions for the standby service water pump motors from 1986 to present. This included inadequate greasing methodologies, mixing of incompatible greases, and overfilling grease in the lower motor bearings which can cause the motor windings to degrade.

The inspectors found that the preventative maintenance task frequency for re-greasing the standby service water lower motor bearings was 6 years, and the bearings had been last greased in 2006 by Work Orders 50967902, 50967901, 50970973, and 50970972. The inspectors reviewed the work order instructions and were concerned that: (1) the lower motor bearing housings were over filled per industry standards, (2) re-greasing the bearing while the machine is running is contrary to vendor and industry standards, (3) station personnel failed to perform a postmaintenance test that ran the motor after grease addition to vent excess grease, and (4) the old grease was not tested for wear products. The vendor maintenance manual VTD-S188-0118, "Siemens Instructions for Induction Motors/Generators Large Frame Vertical," and the Electrical Power Research

Institute (EPRI) lubrication manual NP-7502, "Electric Motor and Predictive Maintenance Guide," had specific guidance for grease addition to the motor bearings that did not appear in the motor bearings re-grease work orders. Specific guidance included running the motor to warm grease before addition and running after grease addition with drain plug removed to evacuate extra grease from the bearing cavity. EPRI NP-7502, Table B-1, note stated that one half of the recommended grease should be added for standby motors. However, the licensee added more than twice the required grease to the standby service water pump motor lower bearings. In addition, EPRI NP-7502, Table B-1, provided a lubrication interval of 24-36 months for a continuously run motor with a 1.5 lubrication interval multiplier for the pumps that operate in standby mode. The inspectors also found that the motor nameplate recommended a lower bearing re-grease frequency of once per year. Further research by the inspectors found that the grease in the lower bearings had been mixed with incompatible greases. The inspectors reviewed standby service water motor outline drawing 0232.920-257-019 and found that the original lower bearing grease supplied with the motors was Gulfcrown number three, lithium-based grease. The station had subsequently greased the motor bearings with Gulfgem (a #1.5 aryl-diurea grease) and Chevron SRI-2 (#3 polyurea-based grease). An Electric Apparatus Service Association article titled, "Lubrication of Electric Motor Bearings," indicated that polyurea, the thickening agent used in SRI-2 grease, is known to be incompatible with lithium-based grease. The inspectors determined that the station had not performed an evaluation for changing the grease types used in the lower bearings. Plant personnel documented the deficiency in Condition Report CR-RBS-2011-08423. The licensee subsequently determined that the pumps could perform their design function with the mixed grease. The inspectors continued to research the lubrication history and found Condition Report CR-86-1388, dated September 10, 1986, that detailed the use of the Gulfgem grease, which was a number one and one-half grease, was the incorrect grease used to lubricate the standby service water pump motor A lower bearing. The corrective action from Condition Report CR-86-1388 changed the preventative maintenance task frequency for re-greasing the bearing from an 18 month to a 9 month frequency. The inspectors reviewed all of the work orders issued for greasing the lower bearings and found that several work orders to re-grease the bearings had been marked as re-grease not required or the steps for re-greasing marked as not applicable. The inspectors developed the following table to detail the completed greasing intervals used for each standby service water pump motor, and informed system engineering of the apparent lack of proper lubrication since installation in the plant. Work orders where the step to add grease was marked as not applicable are not included in the table.

Division I SSW Pump Motors					
Pump A			Pump C		
Date	Grease	Volume	Date	Grease	Volume
8/11/1986	Gulfgem	30 shots	6/10/1987	not recorded	not recorded
6/24/1992	SRI2	not recorded	11/14/1996	not recorded	1.8 oz.
10/14/1996	SRI2	1.8 oz.	7/14/2001	SRI2	3.25 oz.
1/19/2006	SRI2	3.25 oz.	1/19/2006	SRI2	3.25 oz.
Division II SSW Pump Motors					
Pump B			Pump D		
Date	Grease	Volume	Date	Grease	Volume
7/11/1989	SRI2	0.8 oz.	8/11/1986	Gulfgem	20 shots
3/12/1990	SRI2	8 oz.	6/17/1987	not recorded	not recorded
1/17/1997	SRI2	1.8 oz.	10/17/1989	SRI2	0.8 oz.
7/24/2001	SRI2	3.25 oz.	10/24/1996	SRI2	1.8 oz.
5/22/2006	SRI2	3.25 oz.	7/24/2001	SRI2	3.25 oz.
			5/22/2006	SRI2	3.25 oz.

The station based the standby service water pump motors operability evaluation in part, on the satisfactory winding thermocouple temperatures and the satisfactory bearing vibration levels from 2006 to present, and declared the pump motors degraded and non-conforming. Even though the pumps were considered degraded and non-conforming, they could still perform their design function. Corrective actions resulting from the non-conforming and degraded condition included revising work instructions and re-greasing the bearings, performance of boroscopic visual inspections of the upper housing of the lower motor bearing and surrounding motor windings, and chemical and ferrographic analysis of the grease samples from the lower bearings. On December 12, 2011, the station implemented work orders to re-grease and inspect the standby service water pump D motor. The station was unable to perform boroscopic visual inspections of the lower motor windings due to the design of the motor. Standby service water pump C, which is due for removal in RF-17 due to an existing oil leak in the upper bearing, will be disassembled and the interior motor windings will be inspected to verify that grease has not accumulated in the motor windings. This inspection will resolve the generic concern that long term grease accumulation in the motor windings could cause the motors to overheat. Presently, the motor thermocouples do not indicate adverse trends in motor temperatures. In addition, during the re-greasing work on December 12, 2011 using the revised work orders, the inspectors identified that the instructions to lubricate the motor bearings failed to address removal of the appropriate drain plug, due to vague work instructions and lack of follow up communications by the field engineer with the system engineer who developed the work instructions, resulting in most of the grease exiting the bearing through the tolerance fit between the bearing and the motor. Plant personnel documented the deficiency in Condition Report CR-RBS-2011-09133.

Analysis. The licensee's failure to establish work orders that included important guidance for lubricating station service water pump lower motor bearings was a performance deficiency. This performance deficiency is more-than-minor and is therefore a finding because if left uncorrected, has the potential to lead to a more significant safety concern. Specifically, if the subject work orders were not corrected, future work activities that grease the subject bearings in accordance with those work orders may not grease the bearings adequately, which may result in common-cause failures of the station service water pumps. Because this finding was identified while the unit was operating, the inspectors used MC 0609 Appendix A to assess its risk significance. In accordance with that Appendix, the finding screened as green (of very low safety significance) because it was not a design or qualification deficiency; it did not represent a loss of system safety function; and it did not screen as potentially risk-significant due to seismic, flooding, or severe weather initiating events. The inspectors determined that the apparent cause of this finding was failure to include the appropriate scope of information in the work instructions and lack of adequate review by engineering staff. Specifically, the system engineer who developed the revised instructions failed to develop appropriate steps with adequate detail to appropriately perform the task and the field engineer failed to stop work and discuss the issue with the system engineer that developed the work instructions. Therefore, the finding has a crosscutting aspect in the area of human performance associated with work practices, because engineering personnel were overconfident and failed to use the applicable human error prevention techniques [H.4(a)].

Enforcement Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, appendix A, Section 9, requires, in part, that maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures appropriate to the circumstances. Contrary to the above, from 1986 to 2011, the licensee performed maintenance that affected the performance of safety-related equipment with written instructions that were not appropriate to the circumstances. Specifically, the work orders utilized by the licensee did not include important guidance for lubricating station service water pump lower motor bearings. Because this finding is of very low safety significance (i.e. green) and has been entered into the station's corrective action program as Condition Report CR-RBS-2011-08367 and CR-RBS-2011-09133, this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV05000458/2011005-001, Legacy and Present Deficiencies in Lubrication instructions for the Standby Service Water Pump Motors.

1R05 Fire Protection (71111.05)

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:

- October 17, 2011, Division 2 diesel generator room, fire area DG-4
- November 8, 2011, high pressure core spray room
- November 8, 2011, containment (focus on transient combustible storage at reactor water cleanup panel)

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Quarterly Review

a. Inspection Scope

On November 8, 2011, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

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 Annual Inspection

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination. For this annual inspection requirement, the licensee was in the first part of the training cycle.

a. Inspection Scope

The inspector reviewed the results of the examinations and operating tests to satisfy the annual inspection requirements.

On December 14, 2011, the licensee informed the lead inspector of the following results:

- 6 of 7 crews passed the simulator portion of the operating test
- 52 of 53 licensed operators passed the simulator portion of the operating test
- All 53 licensed operators passed the Job Performance Measure (JPM) portion of the examination

The crew that failed the simulator portion of the operating test was remediated, retested, and passed their retake test. Individuals that failed the simulator portion of the operating test were remediated, retested, and passed their retake test.

The inspector completed one inspection sample of the annual licensed operator requalification program.

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:

- Chilled water system
- Digital radiation monitoring system

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

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

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

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

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(2) involving the failure to monitor the performance of the control building chilled water system after the failure to demonstrate that the performance of that system was being effectively controlled through preventive maintenance.

Description. In response to the inspectors' request for unavailability data for the control building chilled water system for the last 3 years, the maintenance rule coordinator initiated Condition Report CR-RBS-2011-07979 to note that the station had failed to appropriately track unavailability of that system, and that their failure to track unavailability had resulted in exceeding the performance criterion for unavailability for that system in February of 2011. The condition report also noted that a maintenance rule expert panel meeting (Meeting Number 2011-06) had recently classified the system as high-risk and that unavailability had not been previously monitored. The inspectors found that Condition Report CR-RBS-2010-02432 had previously documented the maintenance rule expert panel decision on May 25, 2010, to monitor the control building chilled water system as high-risk based on an interim Revision 4a of the River Bend Station Probabilistic Risk Assessment issued in October of 2008. Due to high turnover rates in engineering, several individuals functioned as the maintenance rule coordinator and control building chilled water system engineer from October 2008 to late 2011. The licensee found that insufficient knowledge transfer due to inadequate management oversight resulted in ineffective maintenance rule implementation with regards to the control builder chilled water system. Further review of unavailability data showed that there were periods in 2009 and 2010 where the system would have exceeded the unavailability criteria. In addition, the inspectors found that the station's unavailability and reliability performance was not being monitored at the train level, and unavailability time was only included in the monitoring data for complete loss of divisional system function. The inspectors concluded that by not separately monitoring the control building

chilled water systems that are in standby with redundant trains, performance of one train could mask the poor performance of the other. The station documented the maintenance rule program deficiencies in Condition Report CR-RBS-2012-00487.

Analysis. The inspectors determined that the failure to monitor the performance of the control building chilled water system after the failure to demonstrate that the performance of that system was being effectively controlled through preventive maintenance is a performance deficiency. The finding was more-than-minor because, if left uncorrected, the failure to monitor the performance of the control building chilled water system after the failure to demonstrate that the performance of that system was being effectively controlled through preventive maintenance could become a more significant safety concern. Specifically, if inadequate preventive maintenance resulted in further degradation of the system, the failure to monitor the performance of the system could allow degradation that renders the system inoperable. This finding, however, did not allow degradation that rendered the system inoperable; the system remained capable of performing its intended functions. This finding has very low safety significance because the finding did not lead to an actual loss of safety function of the system or cause a component to be inoperable, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined the cause of the finding to be a lack of knowledge of appropriate methodologies to track availability of risk-important systems. The inspectors determined the cause of the finding was the lack of management oversight. Following the issuance of River Bend Station Probabilistic Risk Assessment interim Revision 4a, several personnel functioned as the maintenance rule coordinator and control building chilled water system engineer. During this period, station management did not ensure sufficient knowledge transfer for effective maintenance rule implementation. Therefore, this finding has a cross-cutting aspect in the human performance area associated with the resources component because the licensee failed to ensure supervisory and management oversight of work activities such that nuclear safety is supported [H.4(c)].

Enforcement. 10 CFR 50.65(a)(1) requires, in part, that each holder of an operating license for a nuclear power plant under this part shall monitor the performance or condition of structures, systems, or components, against licensee-established goals in a manner sufficient to provide reasonable assurance that these structures, systems, and components as described in paragraph (b) of this section, are capable of fulfilling their intended functions. 10 CFR 50.65(a)(2) requires, in part, that monitoring as specified in paragraph (a)(1) of this section is not required where it has been demonstrated that the performance or condition of a structure, system, or component is being effectively controlled through the performance of appropriate preventative maintenance, such that the structure, system, or component remains capable of performing its intended function.

Contrary to the above, from February, 2011, to January 20, 2012, the licensee failed to monitor the performance or condition of a system as specified in 10 CFR 50.65(a)(1) after failing to demonstrate that the performance or condition of a structure, system, or component was effectively controlled through the performance of appropriate preventative maintenance, such that the structure, system, or component remains capable of performing its intended function. Specifically, the licensee failed monitor the

performance of the control building chilled water system as required by 10 CFR 50.65(a)(1) after failing to demonstrate that the performance of the system was being effectively controlled through the performance of appropriate preventative maintenance, such that the system remained capable of performing its intended function. Because this finding is of very low safety significance (i.e. green) and has been entered into the station's corrective action program as Condition Report CR-RBS-2011-00487, this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV05000458/2011005-002, Failure to Adequately Monitor the Performance of the Control Building Chilled Water 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:

- Division 3 outage, October 24, 2011 through November 1, 2011
- Fancy Point switchyard activities while containment monitoring system A out of service, November 7, 2011

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 two 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 issues:

- CR-RBS-2011-07683, control rod drive operability – hydraulic control unit drain valves leaking, reviewed on October 25, 2011
- CR-RBS-2011-07791, Division 3 emergency diesel generator – tripped supply breaker – fuse clips loose, reviewed on October 29, 2011

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and 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 the Updated Safety Analysis Report to the licensee personnel'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. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also 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 two operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- WO 00287500, "EHS-MCC2C-6A SVV-MOV1A Steam Safety & Relief Valve SYS CONTNMT Isolation," reviewed on September 9, 2011

- WO 00126381, "E12-MOVF064B – Perform a Static Signature Test on E12-MOVF064B," reviewed on October 20, 2011
- WO 00296835, "SWP-MOV96B Valve Operator Moved During Stroke Time Test," reviewed on November 1, 2011
- WO 00286756, "E22-EGS001 – Perform 3 Year Inspections," reviewed on November 2, 2011
- WO 00296062, "Repair Division 1 CMS Hydrogen Analyzer Recorder," reviewed on November 9, 2011

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 postmaintenance 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 postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

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-204-1300, "LPCI Pump 'A' Start Time Delay Channel Calibration and Channel Functional Test," performed on October 13, 2011
- STP-201-6310, "SLC Pump and Valve Operability Test," performed on November 25, 2011
- STP-207-4550, "RCS – Leakage Detection Sys – DW and Pedestal Floor Drain Sump MONITORING CHFUNCT TEST (DFR-ESX105, DFR-LI105, DFR-ESX128, DFR-LI128, DER-KC174)," performed on November 25, 2011

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

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

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

40A1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the third quarter 2011 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 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the

performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.3 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate

identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends in steam leaks, operator performance, and safety related and high risk equipment failures. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of May 2011 through November 2011 although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists,

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

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

b. Findings and Observations

No findings were identified.

The inspectors identified an increasing trend in poor maintenance practices and lack of questioning attitude by plant staff, especially in regard to long-standing issues, resulting in failures and degrading conditions in safety-related and high risk systems and components. The specific items noted in the trend were reviewed by the inspectors and determined that all were minor in nature, except for the issues previously documented as non-cited violations or findings. Most of the equipment conditions were either self-revealed through equipment failures and alarms or identified by NRC inspectors. The trend included the following failures and degraded conditions:

Safety Related Systems

Reactor core isolation cooling general system oil leaks
High pressure core spray oil level indicator oil leaks
Standby service water motor bearing lubrication deficiencies
Standby service water / normal service water isolation valves loose bolts
Suppression pool cleanup primary containment isolation valve inadequate bolt torque
Control building chiller service water pressure control valve failures
Division III diesel voltage regulator switch failure
Reactor heat removal cooling water check valve failure
Fuel building ventilation heater failure
Standby gas treatment system heater failure
Main steam positive leakage control air compressor failure
Digital radiation monitoring system failures

Risk Important Systems

Instrument air system control air leaks and relief and check valve failures
Floor drain and sump pump failures
Feedwater system valve failures

The inspectors reviewed trends in operator performance. To accomplish this, the inspectors reviewed operations departmental standards and operation personnel performance through focused, multi-day control room observations, plant walk downs with nuclear equipment operators, and observing shift turnovers. The focused control room observations involved two inspectors spending several days with a shift of control

room operators to observe interactions with plant employees, response to plant alarms and issues, and observation of work management. The control room observations were performed in September and October of 2011. The control room observations identified a large number of main control room deficiencies, a large number of disabled alarms, and several nuisance alarms. One of the observers concluded that there are so many deviations from “normal” on a daily basis, that deviations have become, and are treated as, normal. The observations of plant operators during plant walk downs revealed that operators understand the standards and expectation of plant management, however the inspectors noted that the operators failed to identify minor deficiencies in the plant, including housekeeping and equipment issues. The inspectors also found that the nuclear equipment operators understood their roles and responsibilities. The observations of control room shift turnovers showed satisfactory information exchange between the incoming and off-going shifts.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

The inspectors assessed operations personnel perceptions regarding performance standards and expectations, as well as safety culture, and assessed if the licensee was making satisfactory progress in implementing corrective actions to address operations performance issues. The inspectors interviewed 38 members of the operations staff in five focus groups on a variety of topics, including the corrective action program, work control, staffing, and management expectations. The inspectors also discussed performance improvement initiatives with licensee representatives, and reviewed multiple corrective action documents that are listed in an attachment to this report.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-01.05.

b. Findings and Observations

No findings were identified. Overall, the licensee appeared to be making progress in improving operations performance. Additionally, operations personnel indicated that safety culture at River Bend encouraged raising and resolving safety concerns. However, there were several other areas of concern that surfaced during the focus group discussions:

- While the expectations for the conduct of operations personnel on watch in the control room seemed well communicated, there appeared to be some confusion among equipment operators as to exactly what the expectations were outside the control room.
- The majority of operators interviewed indicated that there is an excessive amount of equipment deficiencies in the plant that caused unnecessary distractions from their normal duties. Operators indicated that these deficiencies had not been prioritized or scheduled for resolution, and that the restoration of inoperable secondary equipment in general took an exorbitant amount of time.

- All of the operators interviewed indicated that the recently implemented six section rotating work schedule was a failure. Operators indicated that the schedule put too much of a burden on the staff due to insufficient resources (as opposed to the former five section work schedule). However, the majority of operators interviewed indicated that their management was aware of their concerns and was actively working on resolving the work schedule problems.
- The majority of operators interviewed indicated that management observations of their work activities could be improved. In some cases, operators indicated that they did not receive any feedback from their management until several days after the work activity was performed, and then only by e-mail.
- The majority of operators interviewed indicated that the corrective action program was overall an effective tool in resolving problems, but feedback on the resolution of generated condition reports could be improved with a short explanation as to how their concern was going to be resolved, instead of receiving a short e-mail that only indicated that the condition report was "closed."
- The overall assessment of operations training was mixed. While most of the operators interviewed indicated that training was helpful, a large number indicated that their training week had too much emphasis on evaluation and not enough emphasis on training, particularly in the control room simulator.

The inspectors communicated these concerns to licensee management personnel during the inspection debrief. Management personnel indicated that the concerns would be evaluated and addressed for resolution.

.5 Selected Issue Follow-up Inspection

a. Inspection Scope

The inspectors reviewed the corrective actions associated with fuel handling errors that occurred during Refueling Outage 16, in February of 2011. The inspectors found the corrective actions to be appropriate and complete.

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

b. Findings

No findings were identified.

40A5 Other Activities

.1 (Closed) Violation 05000458/2010006-01: Failure to Ensure at Least One Train of Equipment Necessary to Achieve Hot Shutdown Conditions is Free of Fire Damage (EA 10-095)

On June 17, 2010, River Bend Station received a Notice of Violation (NOV) for failing to promptly correct a violation involving the failure to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) would be free of fire damage. Specifically, the Division 1 standby service water support system to the Division 1 emergency diesel generator, which was required to achieve safe shutdown, was not protected such that it would remain free from fire damage under all conditions. The NOV was issued due to the licensee's failure to restore full compliance within a reasonable amount of time.

The issue was originally identified in Licensee Event Report (LER 50-458/07-003-00) and corrective action report CR-RBS-2007-02102. The licensee had identified that non-emergency high temperature trips for the emergency diesel generator would be disabled by design when the engine automatically started in emergency mode due to loss of offsite power. Since standby service water could be lost due to fire damage during a control room fire, the emergency diesel generator would continue to run without cooling and potentially fail prior to operators restoring standby service water at the remote shutdown panel. The licensee failed to promptly restore compliance in the three years since identifying the non-conforming condition, during which time the licensee had completed two refueling outages and a planned system outage of sufficient duration.

The inspector determined that the licensee completed corrective actions and implemented engineering changes to restore compliance. The licensee also initiated Condition Report CR-RBS-2010-04274 to address the untimely implementation of the corrective action in CR-RBS-2010-2102. The licensee developed a lessons learned document for the decision-making process used to extend the modification implementation and reviewed it with the onsite review committee to ensure prompt action to restore compliance for future issues. The licensee also revised procedure, AOP-0031, "Shutdown from Outside Main Control Room," Revision 302, and updated the applicable updated safety analysis report to ensure that deficiencies identified have been corrected.

The inspector reviewed engineering changes EC 8684, EC 12204 and CR-RBS2010-04274 to verify completion of the modification. The inspector also reviewed revised procedure AOP-0031 and the revised USAR. The inspector concluded that modifications were completed and the licensee's corrective actions to address decision-making timeliness were adequate.

Based on completing the engineering changes from CR-RBS-2010-2012 and corrective action taken by the licensee in CR-RB-2010-04274, this violation is closed.

.2 (Closed) NRC Temporary Instruction (TI) 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)"

a. Inspection Scope

The inspectors evaluated whether the licensee maintained documents, installed system hardware, and implemented actions that were consistent with the information provided in their response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." Specifically, the inspectors verified that the licensee had implemented, or was in the process of implementing, the commitments, modifications, and programmatically controlled actions described in their response to Generic Letter 2008-01. The inspectors conducted their review in accordance with Temporary Instruction 2515/177 and considered the site-specific supplemental information provided by the Office of Nuclear Reactor Regulation to the inspectors.

b. Inspection Documentation

The inspectors reviewed the licensing basis, design, testing, and corrective actions as specified in the temporary instruction. The specific items reviewed and any resulting observations are documented below.

Licensing Basis: The inspectors reviewed selected portions of licensing basis documents to verify that they were consistent with the NRR assessment report, and that the licensee properly processed any required changes. The inspectors reviewed selected portions of technical specifications, technical specification bases, and the updated final safety analysis report. The inspectors also verified that applicable documents that described the plant and plant operation, such as calculations, piping and instrumentation diagrams, procedures, and corrective action program documents addressed the areas of concern and were changed, if needed, following plant changes. The inspectors confirmed that the licensee performed surveillance tests at the frequency required by the technical specifications. The inspectors verified that the licensee tracked their commitment to evaluate and implement any changes that would be contained in the technical specification task force traveler.

Design: The inspectors reviewed selected design documents, performed system walkdowns, and interviewed plant personnel to verify that the licensee addressed design and operating characteristics. Specifically:

- The inspectors verified that the licensee had identified the applicable gas intrusion mechanisms for their plant.
- The inspectors verified that the licensee had established void acceptance criteria consistent with the void acceptance criteria identified by the Office of Nuclear Reactor Regulation. The inspectors also confirmed that the range of flow conditions evaluated by the licensee was consistent with the full range of design basis and expected flow rates for various break sizes and locations.
- The inspectors selectively reviewed applicable documents, including calculations, and engineering evaluations with respect to gas accumulation in the emergency core

cooling systems and decay heat removal systems. Specifically, the inspectors verified that these documents addressed venting requirements, aspects where pipes were normally voided, void control during maintenance activities, and the potential for vortex effects that could ingest gas into the systems during design basis events.

- The inspectors conducted a walkdown of selected regions of the emergency core cooling systems in sufficient detail to assess the licensee's walk downs. The inspectors completed a system alignment inspection of the low pressure coolant injection mode of the division 2 residual heat removal system in an earlier inspection period. The additional activities counted towards the completion of this temporary instruction and were documented in Inspection Report 05000458/2011004. The inspectors also verified that the information obtained during the licensee's walkdown was consistent with the items identified during the inspectors' independent walkdown.
- The inspectors verified that piping and instrumentation diagrams and isometric drawings describe up-to-date configurations of the emergency core cooling systems and decay heat removal systems. The review of the selected portions of isometric drawings considered the following:
 1. High point vents were identified.
 2. High points without vents were recognizable.
 3. Other areas where gas could accumulate and potentially impact operability, such as at orifices in horizontal pipes, isolated branch lines, heat exchangers, improperly sloped piping, and under closed valves, were described in the drawings or in referenced documentation.
 4. Horizontal pipe centerline elevation deviations and pipe slopes in nominally horizontal lines that exceeded specified criteria were identified.
 5. All pipes and fittings were clearly shown.
 6. The drawings were up-to-date with respect to recent hardware changes, and that any discrepancies between as-built configurations and the drawings were documented and entered into the corrective action program for resolution.
- The inspectors verified that the licensee had completed their walkdowns and selectively verified that the licensee identified discrepant conditions in their corrective action program and appropriately modified affected procedures and training documents.

Testing: The inspectors reviewed selected surveillances, post-modification tests, and post-maintenance test procedures and results, conducted during power and shutdown operations, to verify that the licensee was using procedures that appropriately addressed gas accumulation and/or intrusion into the subject systems. This review included the

verification of procedures used for conducting surveillances and for the determination of void volumes to ensure that void criteria were satisfied and would continue to be satisfied until the next scheduled void surveillances. Also, the inspectors reviewed procedures used for filling and venting following conditions that could introduce voids into the subject systems to verify that the procedures adequately tested for such voids and provided adequate instructions for their reduction or elimination. The inspectors reviewed the performance of the high pressure core spray system fill and vent surveillance in an earlier inspection period. This activity counted towards the completion of this temporary instruction and was documented in Inspection Report 05000458/2011004.

Corrective Actions: The inspectors reviewed selected corrective action program documents to assess how effectively the licensee addressed the issues associated with Generic Letter 2008-01 in their corrective action program. In addition, the inspectors verified that the licensee implemented appropriate corrective actions for issues identified in the nine-month and supplemental responses. The inspectors determined that the licensee had effectively implemented the actions required by Generic Letter 2008-01.

Based on this review, the inspectors concluded that there is reasonable assurance that the licensee will complete all outstanding items and incorporate this information into the design basis and operational practices. This temporary instruction is closed for River Bend Station.

c. Findings

No findings were identified.

40A6 Meetings

Exit Meeting Summary

On October 21, 2011, the inspectors presented the problem identification and resolution focused baseline inspection results to Mr. Eric Olsen, 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.

On November 7, 2011, the inspectors presented the results of the review of NOV 50-458/20110006-01 to Ms. K. Huffstatler, senior licensing specialist. The licensee acknowledged the issues presented. No proprietary information was reviewed.

On November 17, 2011, the inspectors presented the TI 2515/177 inspection results to Mr. Rich Gadbois, General Manager, Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector confirmed that none of the potential report input discussed was considered proprietary.

On January 9, 2012, the lead inspector obtained the final annual examination results and telephonically exited with Mr. J. Fralick, Licensed Operator Continuing Training Supervisor. The inspector did not review any proprietary information during this inspection.

On January 12, 2012, the inspectors reviewed the results of the event follow-up inspection described in section 4OA3 with Mr. Jerry Roberts and other members of the licensee staff. The inspectors confirmed that they had not reviewed any proprietary information.

On January 19, 2012, 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

D. Burnett, Manager, Emergency Preparedness
G. Bush, Manager, Material, Procurement, and Contracts
K. Chapaneri, Senior Engineer
M. Chase, Manager, Training
J. Clark, Manager, Licensing
E. Clevenger, Senior Engineer
C. Colman, Manager, Engineering Programs & Components
R. Conner, Supervisor - Engineering
F. Corley, Manager, Design Engineering
R. Creel, Superintendent, Plant Security
T. Evans, Manager, Operations
M. Feltner, Manager, Planning and Scheduling, Outages
C. Forpahl, Manager, System Engineering
J. Fralick, Licensed Operator Training Supervisor
A. Fredieu, Manager, Outage
W. Fountain, Senior Licensing Specialist
R. Gadbois, General Manager, Plant Operations
T. Gates, Assistant Operations Manager - Shift
H. Goodman, Director, Engineering
E. Hanlon, Engineer I
R. Heath, Manager, Chemistry
K. Huffstatler, Senior Licensing Specialist
L. Kitchen, Manager, Maintenance
G. Krause, Assistant Operations Manager – Support
E. Olson, Vice President, River Bend Station
R. Persons, Superintendent, Training
G. Pierce, Manager, Radiation Protection
J. Roberts, Director, Nuclear Safety Assurance
T. Santy, Manager, Security
T. Shenk, Assistant Operations Manager – Training
M. Spustack, Supervisor, Engineering
J. Standridge, Planner, Emergency Preparedness
N. Tison, Planner, Emergency Preparedness
D. Vines, Manager, Corrective Actions and Assessments
J. Vukovics, Supervisor, Reactor Engineering
L. Woods, Manager, Quality Assurance

NRC Personnel

K. Clayton, Senior Operations Engineer
S. Garchow, Senior Operations Engineer
M. Hayes, Resident, Inspector
D. Strickland, Operations Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000458/2011005-01	NCV	Standby Service Water Pump Motor Lubrication Deficiencies (1R04)
05000458/2011005-02	NCV	Failure to Adequately Monitor the Performance of the Control Building Chiller System (1R12)

Closed

05000458/2010006-01	VIO	Failure to Ensure at Least One Train of Equipment Necessary to Achieve Hot Shutdown Conditions if Free of Fire Damage (40A5.1)
2515/177	TI	Managing Gas Accumulation in Emergency Core Cooling, Decay heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01) (40A5.2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

CALCULATION

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
G13.18.2.1*055	Standby Cooling Tower Pump and Switchgear Rooms' Temperatures During Winter	2

CONDITION REPORTS

CR-RBS-1996-02028 CR-RBS-2011-08822

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OSP-0043	Freeze Protection and Temperature Maintenance	012

WORK ORDERS

WO 52221422	WO 52261155	WO 52272337	WO 52283993
WO 52288979			

Section 1R04: Equipment Alignment

CONDITION REPORTS

CR-RBS-1986-01388	CR-RBS-2010-00963	CR-RBS-2011-03170	CR-RBS-2011-08035
CR-RBS-2011-08037	CR-RBS-2011-08038	CR-RBS-2011-08151	CR-RBS-2011-08211
CR-RBS-2011-08264	CR-RBS-2011-08276	CR-RBS-2011-08277	CR-RBS-2011-08280
CR-RBS-2011-08293	CR-RBS-2011-08294	CR-RBS-2011-08322	CR-RBS-2011-08367
CR-RBS-2011-08371	CR-RBS-2011-08372	CR-RBS-2011-08373	CR-RBS-2011-08374
CR-RBS-2011-08401	CR-RBS-2011-08402	CR-RBS-2011-08423	CR-RBS-2011-08535
CR-RBS-2011-08557	CR-RBS-2011-08588	CR-RBS-2011-08596	CR-RBS-2011-08647
CR-RBS-2011-08677	CR-RBS-2011-08865	CR-RBS-2011-08867	CR-RBS-2011-08878
CR-RBS-2011-08879	CR-RBS-2011-08880	CR-RBS-2011-08881	CR-RBS-2011-08882
CR-RBS-2011-08900	CR-RBS-2011-08901	CR-RBS-2011-08904	CR-RBS-2011-08935
CR-RBS-2011-09025	CR-RBS-2011-09026	CR-RBS-2011-09133	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-MA-134	Offline Motor Electrical Testing	1
EN-OP-104	Operability Determination Process	5
OSP-0065	CRD Performance Testing	0
OSP-0065	CRD Performance Testing	1
OSP-0065	CRD Performance Testing	5

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SOP-0002	Control Rod Drive Hydraulics (SYS #52)	41
SOP-0053	Standby Diesel Generator and Auxiliaries (SYS #309)	320
STP-256-6801	Div I Standby Service Water Cold Shutdown Pump and Valve Operability Test	8
STP-256-6802	Div II Standby Service Water Cold Shutdown Pump and Valve Operability Test	9

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
Control Rod ID #32-37	Control Rod Deficiency Report	02/26/2010
RLP-CM- SYS052	Nuclear Chemistry Technician Training – Control Rod Drive	0
Lab #433205	R&G Laboratories, Inc. - Microscopic Analysis Report (SWP-P2D Lower Brg)	12/14/2011
	PdMA Corporation Oil Analysis Severity Summary (Entergy Nuclear – River Bend)	12/16/2011
Appendix B	Electric Motor Predictive and Preventive Maintenance Guide – Regreasing Guidelines for Motors with Antifriction Bearings	
VTD-S188-0118	Siemens Instructions for Induction Motors/Generators Large Frame Vertical [PUB. #M3534]	0

WORK ORDERS

WO 00217724 WO 00262055 WO 50967901

Section 1R05: Fire Protection

CONDITION REPORTS

CR-RBS-2009-05646 CR-RBS-2011-07985

DRAWING

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ES-101K	Fire Protection Flr Frmg Plan EL 95'-9' Auxiliary Building	1

RIVER BEND STATION UPDATED SAFETY ANALYSIS REPORT

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Appendix 9A	Fire Hazard Analysis	August 1988

Section 1R11: Licensed Operator Requalification Program

CONDITION REPORT

CR-RBS-2011-08315

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	Operating Test Results	01/05/2012
RSMS-OPS-840	Licensed Operator Requalification – Loss of RSS-2, main Turbine oil Leak, ATWS	0

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

CONDITION REPORT

CR-RBS-2011-08020

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ADM-0096	Risk Management Program Implementation and On-Line Maintenance Risk Assessment	310

Section 1R15: Operability Evaluations and Functionality Assessments

CONDITION REPORTS

CR-RBS-2011-07618 CR-RBS-2011-07683 CR-RBS-2011-07729 CR-RBS-2011-07791
CR-RBS-2011-08355

Section 1R19: Postmaintenance Testing

CONDITION REPORTS

CR-RBS-2011-08148 CR-RBS-2011-08189 CR-RBS-2011-08190 CR-RBS-2011-08211
CR-RBS-2011-08216 CR-RBS-2011-08220 CR-RBS-2011-08233 CR-RBS-2011-08268
CR-RBS-2011-08956 CR-RBS-2011-08969

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-DC-153	Preventive Maintenance Component Classification	6
STP-204-6304	Div II RHR Quarterly Valve Operability Test	21
STP-204-6602	Div II RHR position Indication Verification Test	302

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
STP-208-6301	Div I MSIV Leakage Control Quarterly Valve Operability Test	7

WORK ORDER

WO 00126381	WO 00286756	WO 00287500	WO 52363815
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Section 1R22: Surveillance Testing

CONDITION REPORTS

CR-RBS-2011-07455

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
EC 27882	Review TSTF-514, Revision 3, Revise BWR Operability Requirements and Actions for RCS leakage Instrumentation, to Support Proposed LAR2011-06 to River Bend Station, Unit 1 TS 3.4.7 & Bases	0
RBG-47135	License Amendment Request 2011-06, Adoption of Technical Specification Task Force Traveler TSTF-514, Revision 3, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation"	04/11/2011

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
STP-204-1300	LPCI Pump 'A' Start Time Delay Channel Calibration and Channel Functional Test	17
STP-207-4550	RCS-Leakage Detection System-Drywell and Pedestal Floor	8

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	Drain Sump Monitoring Channel Functional Test (DFR-ESX105, DFR-LI105, DFR-ESX128, DFR-LI128, DER-KC174	

Section 40A2: Identification and Resolution of Problems

CONDITION REPORTS

CR-RBS-2010-00185	CR-RBS-2010-02953	CR-RBS-2011-01976	CR-RBS-2011-03037
CR-RBS-2011-03041	CR-RBS-2011-03559	CR-RBS-2011-03633	CR-RBS-2011-03979
CR-RBS-2011-04351	CR-RBS-2011-04592	CR-RBS-2011-04621	CR-RBS-2011-04652
CR-RBS-2011-04653	CR-RBS-2011-04657	CR-RBS-2011-04810	CR-RBS-2011-05140
CR-RBS-2011-05304	CR-RBS-2011-05306	CR-RBS-2011-06088	CR-RBS-2011-06332
CR-RBS-2011-06376	CR-RBS-2011-06987	CR-RBS-2011-06991	CR-RBS-2011-06997
CR-RBS-2011-07186	CR-RBS-2011-07232	CR-RBS-2011-07497	CR-RBS-2011-07744
CR-RBS-2011-07757	CR-RBS-2011-07801	CR-RBS-2011-08628	CR-RBS-2011-08936
CR-RBS-2011-09040	CR-RBS-2011-09092	CR-RBS-2011-09113	CR-RBS-2011-09137

Section 40A5: Other Activities

40A5.1 Violation 05000458/2010006-01 Failure to Ensure at Least One Train of Equipment Necessary to Achieve Hot Shutdown Conditions is Free of Fire Damage (EA 10-095)

PROCEDURES/DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AOP-0031	Shutdown from Outside Main Control Room	302
EE-003GL	Wiring Diagram 1EGS*PNL 3A Diesel Generator Bldg	7
EE-003PD	Wiring Diagram 1EGS*PNL 4A Diesel Generator Bldg	13
EE-470A	Seismic Conduit Installation Plan, El. 98'-0" Stby Diesel Generator Bldg	13

PROCEDURES/DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EE-470P	Conduit and capillary Supports for Stby Diesel Generator Div. 3 Temperature Switch	1
EE-14AB	Wiring Diagram 1EGS*EG1A Diesel Generator Bldg	12
ESK-03E	Control Switch Contact Diagrams	15
ESK-07EGA03	Elementary Diag, 125VDC Control Ckt, Remote Shutdown Transfer Relays	9
ESK-11EGA01	Elementary Diag, 125VDC Control Stby Diesel 1A Rear Start Ckt	23
ESK-11EGA05	Elementary Diag, 125VDC Control Stby Diesel 1A Start , stop and Auxiliary control	10
ESK-11EGA02	Elementary Diag, 125VDC Control Stby Dsl 1A FWD Rear Start and ENG Stop Ckt	23
EGT*TS1A	I&C Setpoint data Sht (Switch)	1
EGO*TS1A	I&C Setpoint data Sht (Switch)	1

CONDITION REPORTS

CR-RBS-2007-02102 CR-RBS-2009-05823 CR-RBS-2010-04274

ENGINEERING CHANGE

EC 08684 EC 12204 EC 12206

WORK ORDERS

WO 00181796 01 WO 00181798

4OA5.2 Temporary Instruction 2515/177, “Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)”

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
G13.18.2.0-082	Gas Vent Time	0
ES-061	Post-LOCA Draw Down Level Change in Suppression Pool & VOLMAX	5
G13.18.10.0*016	Determine if the ECCS Pumps are Susceptible to Vortexing	0
G13.18.10.0*016	Verify Emergency Core Cooling Systems (ECCS) , and Reactor Core Isolation (RCIC) System are Adequately Protected from Air Entrainment due to Vortexing	1
G13.18.10.0-017	Air Intrusion Bubbles due to Return Flow Plunging Jets in CST	0

CONDITION REPORTS

CR-RBS-2008-05905	CR-RBS-2009-00184	CR-RBS-2010-03032	CR-RBS-2011-04665
CR-RBS-2011-05642	CR-RBS-2011-05801	CR-RBS-2011-06146	CR-RBS-2011-06147
CR-RBS-2011-08257	CR-RBS-2011-08261	CR-RBS-2011-08266	

WORK ORDERS

WO 52278487	WO 52297635	WO 52323150	WO 52345107
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DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
PID-27-07B	Residual Heat Removal – LPCI	41
PID-27-04A	HPCS System	26
PID-27-07C	Residual Heat Removal – LPCI	25
PID-27-07C	Residual Heat Removal – LPCI	37

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
PID-27-05A	Low Pressure Core Spray	23
1-RHS-069	Aux. Bldg. EI 95'-9" & 114'-0"	04/09/1986
1-RHS-069	Aux. Bldg. EI 95'-9" & 114'-0"	8
1-CHS-034	Aux. Bldg. EI 114'-0"	05/16/1981
1-RHS-017	Reactor Bldg. EI 114'-0"	04/04/1986
RHS-017	Reactor Bldg. EI 114'-0"	5
PCD-RHS-021	Auxiliary Building EI 95'-9" Sht. 1 & 2	12
1-CSL-42	Auxiliary Building	05/14/1985

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SOP-0031	Residual Heat Removal (SYS #204)	304
SOP-0030	High Pressure Core Spray (SYS # 203)	024
SOP-0032	Low Pressure Core Spray (SYS # 205)	19
GMP-0099	Instrument Sensing Line High/Low Point Valves	4
EN-DC-115	Engineering Change Process	12
EN-DC-141	Design Inputs	10
EN-DC-219	Gas Accumulation Management	0
EN-LI-102	Corrective Action Process	16
EN-DC-153	Preventative Maintenance Component Classification	6
EN-LI-119-01	Equipment Failure Evaluation	1
STP-203-0201	HPCS Piping Fill and Valve Position Verification	303
STP-205-0201	LPCS Piping Fill and Valve Position Verification	010
STP-204-0201	LPCI A Discharge Piping Fill and Valve Lineup Verification	304
STP-204-0202	LPCI B Discharge Piping Fill and Valve Lineup Verification	303
STP-204-0203	LPCI C Discharge Piping Fill and Valve Lineup Verification	305
STP-203-6305	HPCS Quarterly Pump and Valve Operability Test	023
STP-203-6501	HPCS Pump and Valve Operability Test	005

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
STP-204-6302	DIV II LPCI (RHR) Pump and Valve Operability Test	021
STP-205-6301	LPCS Pump and Valve Operability Test	019
ARP-601-16	Alarm Response	301
ARP-601-17	Alarm Response	302
ARP-601-20	Alarm Response	301
ARP-601-21	Alarm Response	307

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
LO-RLO-2011-00037	River Bend Station Self Assessment – NRC GL 2008-01 Managing Gas Accumulation in ECCS	07/27/2011
EC-0000022972	50.59 Screening for Calculation G13.18.10.0*016	0
RGRP-GM-CT1101	Maintenance Continuing Training 11-01 – How Maintenance Can Manage Gas Accumulation	06/01/2011
RLP-OPS- GASACCUMULATION- 10X	Gas Management Training	10/08/2010
RGRP-ESPC-GCS10	RBS 2010 Spring ESP GCT – Basic Overview of Gas Accumulation	03/05/2010
RBS-ME-08-00001	RBS GL 2008-01 Engineering Report	0
SDC-203	High Pressure Core Spray System Design Criteria	4
SDC-205	Low Pressure Core Spray System Design Criteria	2
SDC-204	Residual Heat Removal System Design Criteria	4

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
STP-203-0201	HPCS Piping Water Fill and Valve Position Verification	08/31/2011
STP-203-0201	HPCS Piping Water Fill and Valve Position Verification	09/21/2011
STP-205-0201	LPCS Piping Water Fill and Valve Position Verification	08/16/2011
STP-205-0201	LPCS Piping Water Fill and Valve Position Verification	09/08/2011
STP-204-0201	LPCI 'A' Discharge Piping Fill and Valve Line	08/16/2011
STP-204-0201	LPCI 'A' Discharge Piping Fill and Valve Line	09/08/2011
STP-204-0202	LPCI 'B' Discharge Piping Fill and Valve Line	08/31/2011
STP-204-0202	LPCI 'B' Discharge Piping Fill and Valve Line	09/21/2011
STP-204-0203	LPCI 'C' Discharge Piping Fill and Valve Line	08/31/2011
STP-204-0203	LPCI 'C' Discharge Piping Fill and Valve Line	09/21/2011