



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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May 7, 2007

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St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION - NRC INTEGRATED INSPECTION  
REPORT 05000458/2007002

Dear Mr. Venable:

On March 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your River Bend Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on April 6, 2007, with you and other members of your staff.

The inspection 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.

This report documents two NRC-identified findings and two self-revealing findings of very low safety significance (Green). Two of these findings were determined to involve violations of NRC requirements. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; 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 NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Entergy Operations, Inc.

-2-

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Michael C. Hay, Chief  
Project Branch C  
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Docket: 50-458  
License: NPF-47

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NRC Inspection Report 05000458/2007002  
w/Attachment: Supplemental Information

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SUNSI Review Completed: WCW ADAMS:  Yes  No Initials: WCW  
 Publicly Available  Non-Publicly Available  Sensitive  Non-Sensitive

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RIV:SRI:DRP/C	RI:DRP/C	SPE:DRP/C	C:DRS/EB1	C:DRS/PSB
PJAlter	MOMiller	WCWalker	WBJones	MPShannon
E-WCW	E-WCW	/RA/	/RA/	DAHolman for
5/9/07	5/9/07	5/9/07	5/2/07	5/4/07
C:DRS/EB2	C:DRS/OB	C:DRP/C		
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-458

License: NPF-47

Report: 05000458/2007002

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: 5485 U.S. Highway 61  
St. Francisville, Louisiana

Dates: January 1 through March 31, 2007

Inspectors: P. Alter, Senior Resident Inspector, Project Branch C  
M. Miller, Resident Inspector, Project Branch C  
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Approved By: Michael C. Hay, Chief  
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Division of Reactor Projects

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	3
REPORT DETAILS .....	6
REACTOR SAFETY .....	6
1R01 <u>Adverse Weather Protection</u> .....	6
1R04 <u>Equipment Alignment</u> .....	9
1R05 <u>Fire Protection</u> .....	9
1R06 <u>Flood Protection Measures</u> .....	11
1R11 <u>Licensed Operator Requalification Program</u> .....	11
1R12 <u>Maintenance Effectiveness</u> .....	12
1R13 <u>Maintenance Risk Assessments and Emergent Work Control</u> .....	12
1R15 <u>Operability Evaluations</u> .....	13
1R19 <u>Postmaintenance Testing</u> .....	14
1R22 <u>Surveillance Testing</u> .....	16
1R23 <u>Temporary Plant Modifications</u> .....	17
1EP6 .....	18
RADIATION SAFETY .....	19
2OS1 <u>Access Control to Radiologically Significant Areas</u> .....	19
2OS2 <u>ALARA Planning and Controls</u> .....	19
OTHER ACTIVITIES .....	20
4OA1 <u>Performance Indicator Verification</u> .....	20
4OA2 <u>Identification and Resolution of Problems</u> .....	21
4OA3 <u>Event Follow-up</u> .....	24
4OA6 <u>Meetings, Including Exit</u> .....	26
4OA7 <u>Licensee-Identified Violations</u> .....	27
SUPPLEMENTAL INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....	A-1
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS .....	A-3

## SUMMARY OF FINDINGS

IR 05000458/2007002; 01/01/2007 - 03/31/2007; River Bend Station; Adverse Weather, Postmaintenance Testing, Identification and Resolution of Problems, Event Response

The report covered a 3-month period of routine baseline inspections by resident inspectors and an announced baseline inspection by a radiation protection inspectors. Three Green noncited violations, and one Green finding, 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." 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 3, dated July 2000.

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

#### Cornerstone: Initiating Events

- Green. A self-revealing finding was identified involving the failure of maintenance personnel to follow maintenance instructions resulting in the failure to properly seal the desiccant retention strainer of an instrument air dryer. As a result, desiccant was released from the dryer tower and became lodged in an outlet shuttle valve causing it to stick open that resulted in lowering the instrument air header pressure. This condition caused operators to enter the abnormal operating procedure for loss of instrument air, an automatic start of standby air compressors, and the automatic cross-connect of service air to the instrument air header. These actions restored instrument air pressure preventing a significant plant transient. This issue was entered into the licensee's corrective action program as CR-RBS-2007-00438.

The finding was more than minor because it would become a more significant safety concern if left uncorrected in that an air dryer failure could result in a complete loss of instrument air. The finding affected the initiating event cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because there was no actual loss of instrument air. The cause of the finding was related to the crosscutting element of human performance in that the maintenance technicians failed to properly self and peer check the adequacy of the retention strainer seal during maintenance of instrument air Dryer 2 on January 12, 2007. As a result, desiccant was released causing an outlet shuttle valve to stick open. (Section 1R19)

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding involving the failure of operators to implement compensatory measures for cold weather conditions when a ventilation heater for a safety related standby cooling tower pipe chase was out of service during the winters from 2003 through 2006. This issue was entered into the licensee's corrective action program as CR-RBS-2007-00399.

The finding was more than minor because it was associated with the mitigating system cornerstone attribute of equipment performance and affected the associated cornerstone objective. The finding was determined to have very low safety significance because it did not result in a actual loss of the standby service water system and it was determined by a Phase 3 analysis not to be risk significant due to external events. The cause of the finding was related to the crosscutting aspect of problem identification and resolution in that the licensee failed to identify that freeze protection equipment in the area was out of service each winter from 2003 through 2006 requiring compensatory measures. (Section 1R01)

- Green. A self revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified involving the failure to promptly identify and correct a condition adverse to quality. Specifically, on August 3, 2005, residual heat removal Train A fuel pool cooling assist Valve E12-MOVF037A failed to fully close during actuation. The failure to correct the problem resulted in recurrence of the valve failing to fully close on April 11, 2006, and January 7, 2007. This issue was entered into the licensee's corrective action program as CR-RBS-2006-01326.

The finding was more than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the associated cornerstone objective. The finding had very low safety significance because it did not represent a loss of the residual heat removal system safety function. The cause of the finding was related to the crosscutting element of problem identification and resolution in that the licensee did not thoroughly evaluate the problem such that the resolution would address the cause of the failure of Valve E12-MOVF037A to fully close on August 3, 2005. (Section 4OA2)

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to provide adequate work instructions for repairing a failed tubing compression fitting on the Division I emergency diesel generator jacket cooling water system. Specifically, the repair inappropriately had tubing entering a compression fitting at an angle that could result in failure as had previously been encountered on the same fitting. This issue was entered into the licensee's corrective action program as CR-RBS-2007-01496.

The finding was more than minor because it would become a more significant event if left uncorrected in that failure to install and repair tubing fittings correctly can lead to subsequent failure. The finding affected the mitigating systems cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the repair did not result in an actual loss of function of the Division I emergency diesel generator. The cause of the finding was related to the crosscutting element of human performance in that the licensee did not effectively communicate expectations for proper assembly of tubing fittings on safety related equipment. (Section 4OA3)

B. Licensee-Identified Violations

One violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

Summary of Plant Status: The plant was operated at 100 percent power from January 1 to 26, 2007, when power was reduced to 65 percent for a control rod pattern exchange. The reactor was restored to 100 percent power on January 28. On March 1, reactor power was reduced to 94 percent because of problems with main condenser vacuum. On March 2 reactor power was lowered to 92 percent for a control rod pattern exchange and control rod testing, then restored to 100 percent. On March 10 reactor power was lowered to 97 percent because of problems with main condenser vacuum and lowered to 92 percent on March 13 to replace two heater drain pump motors. The reactor was returned to 100 percent power on March 16. On March 19 reactor power was lowered to 95 percent and the plant was operated at between 92 and 97 percent power for the remainder of the inspection period because of problems with main condenser vacuum.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

##### .1 Readiness For Seasonal Susceptibilities

The inspectors completed a review of the licensee's readiness for seasonal susceptibilities involving cold weather. The inspectors: (1) reviewed plant procedures and the Updated Safety Analysis Report (USAR) to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the systems listed below to ensure that adverse weather protection features were sufficient to support operability, including the ability to perform safe shutdown functions; and (3) reviewed the corrective action program (CAP) and selected work orders (WO) to determine if the licensee identified and corrected problems related to adverse weather conditions.

- January 29, 2007, standby cooling tower basement structure, systems, and components

Documents reviewed by the inspectors included:

- WO 00030099, Heater HVY-CH18 ground fault, September 29, 2003
- Operations Section Procedure OSP-0043, "Freeze Protection and Temperature Maintenance," Revision 7
- WO 51037916, "Cold weather Protection - For Winter Preps Review Open Work Orders," Performed November 27, 2006
- Control room supervisor relief checksheet, daily review

- CR-RBS-2000-02178, NRC Integrated Inspection Report 50-458/00-16 deficiencies CAP entries, dated December 20, 2000
- CR-RBS-2007-00399, Inadequate procedural guidance to ensure area temperatures are maintained above 40°F, Dated January 31, 2007

The inspectors completed one inspection sample.

b. Findings

Introduction: The inspectors identified a finding for the failure of operators to implement compensatory measures for cold weather conditions when a ventilation heater for a standby cooling tower pipe chase was out of service during the winters from 2003 through 2006.

Description: On January 29, 2007, the inspectors found that ventilation Heater HVY-CH18 was out of service. The inspectors noted this heater provided the only source of freeze protection for the east side standby cooling tower pipe chase and tunnel. The inspectors noted during the inspection that outdoor temperatures had previously been below 32°F several times.

The inspectors identified the licensee had failed to implement freeze protection compensatory measures for the inoperable ventilation heater in accordance with Procedure OSP-0043, "Freeze Protection and Temperature Maintenance," Revision 7. Specifically, Step 1.2 states, in part, that freeze protection contingency actions are provided for equipment that is vulnerable to freezing conditions. The inspectors noted that small diameter instrument lines associated with Division I and II standby cooling tower level detectors would be susceptible to freezing conditions. The output of these detectors provided indication of the standby cooling tower water level in the main control room and annunciators for high or low level conditions. Following discussions with the licensee adequate freeze protection contingency actions were developed as required by OSP-0043. The licensee entered this issue in the CAP as CR-RBS-2007-00399.

The inspectors noted through document review and personnel interviews that Heater HVY-CH18 had failed on September 29, 2003. Cold weather preparations require maintenance personnel to identify any open work orders for equipment that are out of service and provide freeze protection. On September 15, 2003, November 19, 2004, December 7, 2005, and November 12, 2006, this activity was performed, however, maintenance personnel failed to identify that work order WO 30099, to repair Heater HVY-CH18, was open and that the heater was out of service. Because the maintenance personnel failed to identify WO 30099 was still open, the operators did not provide freeze protection contingency actions for the east side standby cooling tower pipe chase and tunnel as required by OSP-0043.

The inspectors found that NRC integrated inspection Report 05000458/2000-016, dated December 20, 2000, documented inspector identified deficiencies of very low safety significance associated with implementation of cold weather protection requirements of Procedure OSP-0043. The licensee entered this issue in the CAP as CR-RBS-2000-02178. One corrective action specified that temperatures should be recorded in an area if associated freeze protection equipment in the area malfunctions and until the condition is corrected.

The inspectors found that the River Bend Station (RBS) individual plant examination of external events stated that the climate is generally mild with the plant never seeing extremes of heat or cold and failures due to cold are generally limited to loss of offsite power, which was sufficiently analyzed in the internal events probabilistic safety analysis. Therefore, severe temperatures and freezing conditions affecting the standby cooling tower and standby service water (SSW) 30 inch piping need not be analyzed.

The inspectors concluded that the licensee had chosen to implement a cold weather strategy of checking freeze protection equipment status rather than recording area temperatures. The inspectors also concluded that the licensee's freeze protection strategy failed because they did not correctly identify the status of the only freeze protection equipment available for the east side standby cooling tower pipe chase and tunnel. The consequence of this failed strategy was that the sensing lines for standby cooling tower level instruments (control room indications and alarms) were subject to freezing conditions during the winter from 2003 through 2006.

Analysis: The performance deficiency associated with this finding involved the failure of the licensee to provide freeze protection contingency actions for equipment that was vulnerable to freezing conditions when ventilation Heater HVY-CH18 was out of service each winter from 2003 through 2006 as required by OSP-0043. The finding was more than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using NRC Manual Chapter (MC) 0609, "Significance Determination Process," Phase 1 Worksheet, a Phase 3 analysis was required because the finding had the potential to be risk significant due to a severe weather initiating event. A Phase 3 analysis determined the finding was of very low safety significance. The cause of the finding was related to the crosscutting aspect of problem identification and resolution in that the licensee failed to identify that freeze protection equipment in an area was out of service each winter from 2003 through 2006. The licensee documented the finding in the CAP as CR-RBS-2007-00399. FIN 05000458/2007002-01, "Failure to Implement Freeze Protection compensatory Measures."

Enforcement: No violation of NRC requirements was identified.

## 1R04 Equipment Alignment

### 1. Partial System Walkdowns

#### a. Inspection Scope

The inspectors: (1) walked down portions of the three risk important systems listed below and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walk down to the licensee's USAR and CAP to ensure problems were being identified and corrected.

- January, 29, 2007, Division I emergency diesel generator (EDG)
- January, 30, 2007, high pressure core spray system (HPCS)
- January, 31, 2007, reactor core isolation cooling system (RCIC)

System operating procedures (SOP) reviewed by the inspectors included:

- SOP-0053, "Standby Diesel Generators and Auxiliaries," Revision 302
- SOP-0030, "High Pressure Core Spray System," Revision 23
- SOP-0035, "Reactor Core Isolation Cooling System," Revision 29

The inspectors completed three inspection samples.

#### b. Findings

No findings of significance were identified.

## 1R05 Fire Protection

### a. Inspection Scope

#### .1 Quarterly Inspection

The inspectors walked down the six plant areas listed below to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a

satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the CAP to determine if the licensee identified and corrected fire protection problems.

- January 29, 2007, Reactor Building, 114-foot level, hydraulic control unit area east, Fire Area RC-3/Z-3
- January 31, 2007, G-tunnel, 70-foot level, Fire Area PT
- February 8, 2007, Auxiliary Building, 95-foot level, unit Cooler HVR-UC2 area, Fire Area AB-095-Z2
- February 8, 2007, Auxiliary Building, 95-foot level, shield building access area, Fire Area AB-15-Z2
- February 9, 2007, Reactor Building, 114-foot level, hydraulic control unit area west, Fire Area RC-4/Z-3
- March 5, 2007, Auxiliary Building, 95-foot level, primary plant cooling water heat exchanger area, Fire Area AB-1/Z-2

Documents reviewed by the inspectors included:

- Pre-Fire Plan/Strategy Book
- USAR Section 9A.2, "Fire Hazards Analysis"
- RBS post-fire safe shutdown analysis
- RBNP-038, "Site Fire Protection Program," Revision 6B

The inspectors completed six inspection samples.

## .2 Annual Inspection

On March 20, 2007, the inspectors observed a fire brigade drill to evaluate the readiness of licensee personnel to prevent and fight fires, including the following aspects: (1) the number of personnel assigned to the fire brigade, (2) use of protective clothing, (3) use of breathing apparatuses, (4) use of fire procedures and declarations of emergency action levels, (5) command of the fire brigade, (6) implementation of pre-fire strategies and briefs, (7) access routes to the fire and the timeliness of the fire brigade response, (8) establishment of communications, (9) effectiveness of radio communications, (10) placement and use of fire hoses, (11) entry into the fire area, (12) use of fire fighting equipment, (13) searches for fire victims and fire propagation, (14) smoke removal, (15) use of pre-fire plans, (16) adherence to the drill scenario, (17) performance of the post-drill critique, and (18) restoration from the fire drill. The licensee simulated a fire in the control building, 116-foot elevation, Division I safety related cable Chase III, Fire Area C-9.

The inspectors completed one inspection sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

Semi-annual Internal Flooding

The inspectors: (1) reviewed the USAR, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; (2) reviewed the USAR and CAP to determine if the licensee identified and corrected flooding problems; (3) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (4) walked down the area to verify the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms, and control circuits, and (f) temporary or removable flood barriers. The specific area inspected, during the week of February 8, 2007, was the HPCS 95-foot elevation access area.

The inspectors completed one inspection sample.

b. Findings

No findings of significance were identified

1R11 Licensed Operator Requalification Program

a. Inspection Scope

On January 23, 2007, the inspectors observed operator team testing of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved a steam leak in the drywell and drywell to containment leak. Documents reviewed by the inspectors included:

- Operations Section Procedure, OSP-0053, "Emergency and Transient Response Support Procedure," Revision 5
- Simulator Scenario, RSMS-OPS-508, "Steam Leak in Drywell with Steam Bypass to Containment," dated December 6, 2006

The inspectors completed one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two maintenance and operational activities listed below to: (1) verify the appropriate handling of structures, systems, and components (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the maintenance rule, 10 CFR Part 50 Appendix B, and the TS.

- January 17, 2007, residual heat removal (RHR) Train A to upper pool fuel pool cooling assist Valve E12-MOVF027A failed to fully close
- June 26, 2005, while manually starting Division II SSW, Pump SWP-P2D automatically started

Documents reviewed by the inspectors included:

- NUMARC 93-01, "Nuclear Energy Institute Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2
- RHR, SSW, and normal service water (NSW) Maintenance rule function list
- RHR, SSW, and NSW Maintenance rule performance criteria list
- RHR, SSW, and NSW maintenance rule performance evaluations

The inspectors completed two inspection samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

.1 Risk Assessment and Management of Risk

The inspectors reviewed the two assessment activities listed below to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and administrative Procedure ADM-096, "Risk Management Program Implementation and On-Line Maintenance Risk Assessment," Revision 04B, prior to changes in plant

configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- Week of January 22, 2007, Division III work week and switchyard maintenance
- Week of January 29, 2007, Division II emergency diesel generator outage

Documents reviewed by the inspectors included:

- Computerized equipment out-of-service risk monitor, week of January 29, 2007
- Daily plant status sheets, week of January 29, 2007
- Computerized LCO reports, week of January 29, 2007
- Computerized RBS daily schedule by system, week of January 29, 2007

## .2 Emergent Work Control

For two emergent work activities, the inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergent work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the CAP to determine if the licensee identified and corrected risk assessment and emergent work control problems.

- January 25, 2007, perform high pressure, high volume flush of RCIC steam line differential pressure instruments during Division III/HPCS work week
- February 16, 2007, replace Division I, Channel A, reactor protection system scram Relay C71A-K71

The inspectors completed four inspection samples.

### b. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations

### a. Inspection Scope

The inspectors: (1) reviewed plants status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the USAR and design basis documents to review the technical adequacy

of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any TS; (5) used the Significance Determination Process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components. The licensee operability evaluations were documented in the following condition reports (CR):

- CR-RBS-2007-00124, Off-gas pretreatment radiation monitor reading lower than expected for plant conditions, reviewed on January 16, 2007
- CR-RBS-2007-00206, Lowering control air pressure during Division I emergency diesel generator surveillance testing, reviewed on January 18, 2007
- CR-RBS-2007-00208, Local power range monitors (LPRM) calibrated incorrectly, reviewed on January 24, February 14-15, 2007
- CR-RBS-2007-00592, Low pressure core spray (LPCS) injection line low pressure alarm came in during routine fill and vent procedure, and CR-RBS-2007-00181, LPCS injection line low pressure came in during keep fill pump portion of system quarterly in-service test surveillance procedure, reviewed on February 16 and 21, 2007
- CR-RBS-2007-00414 and -00416, secondary containment watertight doors discovered open and unattended by security, reviewed on February 2, 2007

Documents reviewed by the inspectors included: Nuclear Management Manual Procedure EN-OP-104, Operability Determinations, Revision 1.

The inspectors completed five inspection samples.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors selected the five postmaintenance test activities listed below of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test

equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also reviewed the CAP to determine if the licensee identified and corrected problems related to postmaintenance testing. The postmaintenance testing was part of the following WOs:

- WO 00094984, Replace IAS-DRY2 desiccant, reviewed on February 12, 2007
- WO 00091258, Replace Division I, Channel A, reactor protection system scram Relay C71A-K71, reviewed on February 16 and 21, 2007
- WO 00085208, Division II diesel generator overhaul, reviewed on March 1, 2007
- WO 51098394, Replace Division II, Channel A, reactor protection system scram Relays, C71A-K70, C71A-K24A, C71A-K1A, and C71A-K15A, reviewed on March 8, 2007
- WO 51087033, Conduct STP-505-4251, "RPS/Local Power Range Monitor 2000 MWD/T Channel Calibration Test," reviewed on March 13, 2007

Documents reviewed by the inspectors included:

- STP-508-0201, "Manual Scram Channel Functional Test and LSFT," Revision 10, performed on March 8, 2007
- Procedure Change Notice STP-505-4251R020CN-B, dated January 24, 2007
- WO-00101859, troubleshoot and repair traverse in-core Probe A, performed on January 18, 2007
- STP-309-0207, "Division II Diesel Generator 184 Day Operability Test," Revision 2, performed on February 8, 2007

The inspectors completed five inspection samples.

b. Findings

Introduction: A self-revealing Green finding was identified involving the failure of maintenance personnel to follow maintenance instructions resulting in the failure to properly seal the desiccant retention strainer of an instrument air dryer. As a result, desiccant was released from the dryer tower and became lodged in an outlet shuttle valve causing it to stick open that resulted in lowering the instrument air header pressure.

Description: On February 8, 2007, control room operators entered the abnormal operating procedure for loss of instrument air in response to lowering instrument air header pressure. Operators discovered the cause of the event was due to instrument air Dryer 2 being in continuous blowdown. Actions were taken to isolate Dryer 2 and place Dryer 3 in service.

Maintenance technicians later found the Dryer 2 outlet shuttle valve stuck open. When they took the valve apart they found it clogged with desiccant. Subsequent investigation revealed that the dryer tower desiccant retaining basket strainer was not properly sealed allowing desiccant to enter the air dryer piping.

The inspectors reviewed WO 94984 which was used to replace the dryer desiccant on January 12, 2007. The licensee determined that the maintenance technicians who replaced the desiccant failed to use "one or more rings of gasket material to shim between the seal ring around the middle of the strainer basket" as directed in the work instructions for the task.

The inspectors determined that the failure to properly seal the desiccant retaining basket strainer on January 12, 2007, allowed desiccant to bypass the strainer and clog the dryer outlet shuttle valve. This caused the dryer to go into continuous blowdown which lowered instrument air header pressure. The problem did not result in a complete loss of instrument air because automatic controls started the other air compressors and cross-connected service air to supply the instrument air header.

Analysis: The performance deficiency associated with this finding involved the failure of maintenance technicians to properly seal the retaining basket while changing the desiccant in instrument air Dryer 2 on January 12, 2007. The finding was more than minor because it would become a more significant event if left uncorrected in that an instrument air dryer failure could cause an actual loss of instrument air. The finding affected the initiating event cornerstone. Using the MC 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the failure did not result in an actual loss of instrument air and had no affect on any mitigating systems. The cause of the finding was related to the crosscutting element of human performance in that maintenance technicians failed to properly self and peer check resulting in failure to properly seal the retention strainer while changing the desiccant in instrument air Dryer 2 on January 12, 2007. The licensee documented the finding in the CAP as CR-RBS-2007-00438 and -00528. The corrective actions to restore compliance included revision of the routine task work instructions for changing instrument air dryer desiccant to clarify how to inspect the retention strainer without removing the retention basket from the dryer. FIN 05000458/2007002-02, "Failure to Follow Maintenance Instructions."

Enforcement: No violation of NRC requirements was identified because the instrument air system is not a safety related system.

## 1R22 Surveillance Testing

### a. Inspection Scope

The inspectors reviewed the USAR, procedure requirements, and TS to ensure that the five Surveillance Test Procedures (STP) listed below demonstrated that the SSC's tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test

attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested SSC's not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- STP-505-4251, "RPS/Local Power Range Monitor 2000 MWD/T Channel Calibration Test," Revision 20, performed on January 11, 2007
- STP-309-0611, "Division I Diesel Generator 24 Hour Run," Revision 18, performed on January 17 and 18, 2007
- STP-207-4552, "Drywell Air Cooler Drain Condensate Flow Rate Channel Functional Test," Revision 3A, reactor coolant system leakage detection equipment surveillance test performed on February 1, 2007
- STP-205-4207, "LPCS Pump Discharge Pressure High/Low Channel Calibration Test," Revision 8A, reviewed on February 22, 2007
- STP-256-6311, "Division III Standby Service Water Quarterly Valve Operability Test," Revision 5, in-service surveillance test performed on February 22, 2007

The inspectors completed five inspection samples.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the USAR, plant drawings, procedure requirements, and TS to ensure that one temporary modification was properly implemented. The inspectors: (1) verified that the modification did not have an affect on system operability/availability; (2) verified that the installation was consistent with modification documents; (3) ensured that the post-installation test results were satisfactory and that the impact of the temporary modification on permanently installed SSC's were supported by the test; (4) verified that the modification was identified on control room drawings and that appropriate identification tags were placed on the affected drawings; and (5) verified that appropriate safety evaluations were completed. The inspectors verified that the licensee identified and implemented any needed corrective actions associated with the temporary modification.

- Temporary Alteration EC-00261, install temporary vendor supplied diesel driven compressor IAS-TMOD-C1, reviewed on February 27 and March 19, 2007

Documents reviewed by the inspectors included:

- CR-RBS-2007-00759, weekly run failure of IAS-TMOD-C1
- Potential TS, PTS-07-0711 for IAS-TMOD-C1

The inspectors completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

For the drill below contributing to Drill/Exercise Performance and Emergency Response Organization Performance Indicators, the inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in classification, notification, and Protective Action Requirements development activities; (2) reviewed the identified weaknesses and deficiencies against licensee-identified findings to determine whether the licensee is properly identifying deficiencies; and (3) determined whether licensee performance was in accordance with the guidance of the Nuclear Energy Institute (NEI) 99-02, "Voluntary Submission of Performance Indicator Data," Revision 2, acceptance criteria.

- February 20, 2007, RDRL-EP-0701, "Site Training Drill," Revision 0

Documents reviewed by the inspectors included:

- EIP-2-001, "Classification of Emergencies," Revision 14
- EIP-2-006, "Notifications," Revision 32
- EIP-2-007, "Protective Action Guidelines Recommendations," Revision 21
- EP-M-07-006, "Team A Site Drill Feb. 20, 2007," dated March 19, 2007

The inspectors completed one inspection sample.

b. Findings

No findings of significance were identified.

## 2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

### 2OS1 Access Control to Radiologically Significant Areas

#### a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector 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 inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone
- Controls (surveys, posting, and barricades of radiation, high radiation, or airborne radioactivity areas)
- Corrective action documents related to access controls

The inspector completed six of the required 21 inspection samples.

#### b. Findings

No findings of significance were identified.

### 2OS2 ALARA Planning and Controls

#### a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Site-specific ALARA procedures
- One work activity of highest exposure significance completed during the last outage
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements

- Intended versus actual work activity doses and the reasons for any inconsistencies
- Dose-rate reduction activities in work planning
- Post-job (work activity) reviews
- Method for adjusting exposure estimates, or replanning work, when unexpected changes in scope or emergent work were encountered
- Exposure tracking system
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques
- Corrective action documents related to the ALARA program and followup activities, such as initial problem identification, characterization, and tracking

The inspector completed eight of the required 15 inspection samples and five of the optional inspection samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator (PI) Verification

a. Inspection Scope

Cornerstone: Initiating Events

The inspectors sampled licensee submittals for the three PIs listed below for the period January 1 to December 31, 2006. The definitions and guidance of Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of PI data reported during the assessment period. The inspectors reviewed licensee event reports, monthly operating reports, and operating logs as part of the assessment.

- Unplanned Scrams Per 7,000 Critical Hours
- Unplanned Scrams With Loss Of Normal Heat Removal
- Unplanned Power Changes Per 7,000 Critical Hours

The inspectors completed three inspection samples.

## Cornerstone: Occupational Radiation Safety

### Occupational Exposure Control Effectiveness

The inspector reviewed licensee documents from June 1 through September 30, 2006. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's technical specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 4). Additional records reviewed included records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance indicator definitions and guidance contained in NEI 99-02, Revision 4, were used to verify the basis in reporting for each data element.

The inspector completed one inspection sample.

## Cornerstone: Public Radiation Safety

### Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

The inspector reviewed licensee documents from June 1 through September 30, 2006. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded PI thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the PI data. Performance indicator definitions and guidance contained in NEI 99-02, Revision 4, were used to verify the basis in reporting for each data element.

The inspector completed one inspection sample.

#### b. Findings

No findings of significance were identified.

### 4OA2 Identification and Resolution of Problems

#### .1 Review of Items Entered into the Corrective Action Program

The inspectors performed a daily screening of items entered into the licensee's CAP. This assessment was accomplished by reviewing condition reports and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the CAP; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow-up through other baseline inspection procedures.

## .2 Annual Sample

### a. Inspection Scope

In addition to the routine review, the inspectors selected the below listed issues for a more in-depth review. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- January 7, 2007, E12-MOVF037A, RHR A to upper pool fuel pool cooling (FPC) assist throttle valve failed to fully close

Documents reviewed by the inspectors included:

- WO 00095936, replace components in E12-MOVF037A
- CR-RBS-2007-00500, E12-MOVF037A, RHR A to upper pool FPC assist throttle valve failed to fully close on January 7, 2007
- CR-RBS-2006-01326, E12-MOVF037A, RHR A to upper pool FPC assist throttle valve failed to fully close on April 11, 2006
- CR-RBS-2005-04113, Restore regulatory compliance to NCV in NRC inspection Report 05000458/2005004
- CR-RBS-2005-02772, E12-MOVF037A, RHR A to upper pool FPC assist throttle valve failed to fully close on August 3, 2005
- CR-RBS-2004-03825, E12-MOVF037A, RHR A to upper pool FPC assist throttle valve failed to fully close on November 10, 2004

The inspectors completed one inspection sample.

### b. Findings and Observations

Introduction: A self revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified involving the failure to promptly identify and correct a condition adverse to quality. Specifically, on August 3, 2005, residual heat removal Train A fuel pool cooling ( FPC )assist Valve E12-MOVF037A failed to fully close during actuation. The failure to correct the problem resulted in recurrence of the valve failing to fully close on April 11, 2006, and January 7, 2007.

Description: On April 11, 2006, water was unintentionally pumped from the suppression pool to the upper fuel pool when RHR Pump A was run for heat exchanger flushing. This transfer occurred because Valve E12-MOVF037A was not fully closed.

The licensee entered this into the CAP as CR-RBS-2006-01326 and wrote a corrective action to conduct a signature test and troubleshoot E12-MOVF037A. On August 3, 2006, a signature test was performed however, no troubleshooting was conducted and no data was collected as required by Attachment 9.1 of EN-MA-125, "Troubleshooting Control of Maintenance Activities." The corrective action was closed stating that the cause of the malfunction had not been identified.

The inspectors found that the April 11, 2006, failure of E12-MOVF037A to fully close was a repeat of an August 3, 2005, event documented in CR-RBS-2005-02772 and NCV 05000458/2005004-03. The corrective actions at that time were to conduct an apparent cause evaluation and to provide operator training and revise procedures with instructions for the operators to hold throttle valve control switches in the closed position for five seconds after the full closed indication was received in the control room. The licensee did not inspect the valve's motor operator or conduct troubleshooting following the August 3, 2005, event.

Following the January 7, 2007, failure of E12-MOVF037A to fully close, CR-RBS-2007-0050 was written and closed to CR-RBS-2006-01326. It was determined that maintenance technicians would replace components in the motor operator for E12-MOVF037A and perform a signature test following that work. While replacing these components, the licensee found that there was an excessive amount of grease in the spring pack cavity, spring pack compression was not repeatable, and the torque switch mounting screws were not tight. This caused inconsistent torque switch operation which would cause the valve to not fully close intermittently.

The inspectors concluded that the licensee's failure to troubleshoot Valve E12-MOVF037A in response to the August 3, 2005, and April 11, 2006, events resulted in the licensee's failure to fully evaluate the problem to determine the cause of the malfunction. This resulted in the failure to correct the problem with the valve. The inspectors determined that this event did not affect the safety function of E12-MOVF037A because the diverted flow rate (approximately 46 gpm) to the upper fuel pool was small compared to low pressure coolant injection flow rate (5,050 gpm) and E12-MOVF037A would have closed if it received a close signal from the automatic system initiation logic.

Analysis: The performance deficiency associated with this finding involved the failure to promptly identify and correct a condition adverse to quality when Valve E12-MOVF037A failed to fully close on August 3, 2005. The finding was more than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, or function of RHR Train A. Using the MC 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because it was not a qualification deficiency, did not represent a loss of system safety function, and was not potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of the finding was related to the crosscutting element of problem identification and resolution in that the licensee failed to thoroughly evaluate the problem such that the resolution would address the cause of the failure. The corrective actions to restore compliance included reviewing the troubleshooting procedure and reassess management expectations regarding maintenance troubleshooting.

Enforcement: 10 CFR Part 50 Appendix B, Criterion XVI, "Corrective Action," states, in part, that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected." Contrary to this, the licensee failed to promptly correct the condition adverse to quality that caused the August 3, 2005 failure of Valve E12-MOVF037A to fully close and that failure resulted in two other failures of Valve E12-MOVF037A to fully close on April 11, 2006, and January 7, 2007. Because this finding was of very low safety significance and has been entered into the licensee's CAP in CR-RBS-2006-01326, this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000458/2007002-03, "Failure to Promptly Identify and Correct a Degraded Residual Heat Removal System Valve."

.3 The inspectors also evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

No findings of significance were identified.

#### 4OA3 Event Follow-up

1. (Closed) LER 05000458/2005-002-00, "Unplanned Automatic Actuation of Standby Service Water Due to Procedural Error"

On June 24, 2005, while manually starting Division II SSW, after Pump 2B was started system pressure lowered below the automatic start setpoint and Pump 2D started automatically. The licensee determined that Division II SSW was not properly aligned for single pump operation due to an inadequate system operating procedure. The procedure failed to ensure the primary plant cooling water heat exchanger was aligned to Division I SSW, as a result when Pump 2B was started and the return valve to the standby cooling tower was opened, the pump could not supply all the flow required and system pressure lowered below the SSW automatic start setpoint. It was later determined that the procedure step for aligning the primary plant closed cooling water heat exchanger for a manual start of Division II SSW were worded exactly the same as for a start of Division I SSW and not specifically worded for the start of Division II SSW. This inadequate procedure constitutes a minor violation of TS 5.4.1.a and is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented this event in CR-RBS-2005-02292. This LER is closed.

2. (Closed) LER 05000458/2005-003-00, "Operation Prohibited by Technical Specifications Due to Diesel Generator Malfunction"

Introduction: The inspectors identified a NCV 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to provide adequate work instructions to ensure the proper repair of failed tubing fitting on the Division I EDG governor cooling water return line. As a result, the repair was not made in accordance with vendor manual instructions for tubing fitting repairs.

Description: On July 31, 2005, a compression fitting on the Division I EDG governor cooling water return line failed during a pre-maintenance run of the diesel engine. This was documented in LER 05000458/2005-003-00 and in NRC Inspection Report 05000458/2005004. Maintenance technicians repaired the tubing fitting on August 1, 2005 using WO 00069577. On September 14, 2005, the inspectors observed that the tubing did not enter the compression fitting properly and informed the maintenance personnel who then initiated condition report CR-RBS-2005-03243 and Work Request 60282. The inspectors noted that the less than adequate repair was allowed to stand during postmaintenance closeout of WO 00069577 and that the improperly assembled fitting was not recognized by maintenance supervisors or technicians between the time of repair on August 1 and September 14.

The inspectors reviewed WO 00069577 and determined that the work instructions directed the technicians to remove the end of the damaged tubing and install a new fitting on the shortened tubing. As a result, the tubing entered the fitting at an angle so that the ferrule did not compress the tubing uniformly. The inspectors also reviewed CR-RBS-2005-02727 and -03243. According to the licensee's failure mode analysis, the tubing failure on July 31, 2005, was due to uneven compression of the tubing by the compression ferrule. This was exacerbated over time by diesel engine vibration and over-tightening the fitting to stop small leaks.

The inspectors interviewed the maintenance training staff and determined that "skill of the craft" training was given during 2003 and 2004 continuing training on proper tubing fitting assembly. The training materials referenced vendor manual guidance for proper tubing fitting assembly and clearly showed that it is unacceptable for tubing to enter a compression fitting at an angle.

The entire governor oil cooler cooling water return line and fittings were replaced on February 12, 2007. Visual inspection of the improper repair showed no degradation at that time. On April 16, 2007, the licensee wrote CR-RBS-2007-01496, to address the issue of management expectations regarding improperly performed repairs to safety related equipment.

The inspectors determined that the work instructions for the fitting repair led the technicians to assemble the fitting in a manner that was not in accordance with vendor manual guidance and maintenance technician training. To assess the relative importance of the issue, the inspectors reviewed MC 0612, Appendix E, "Examples of Minor Issues." The inspectors determined that there was no clear example of inappropriate work instructions and management acceptance of improperly performed repairs to safety related equipment. Therefore, the guidance in MC 0612, Appendix E did not apply to this issue.

Analysis: The performance deficiency associated with this finding involved the failure of maintenance technicians to properly assemble a tubing fitting on the Division I EDG governor cooling water return line. The finding was more than minor because it would become a more significant event if left uncorrected in that failure to install and repair tubing fittings correctly can lead to failures in safety related systems. The finding affected the mitigating systems cornerstone. Using the MC 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the repair did not result in an actual loss of function of the Division I EDG. The cause of the finding was related to the crosscutting element of

human performance in that maintenance management failed to effectively communicate expectations for procedure compliance and proper assembly of tubing fittings on safety related equipment. This issue was entered into the licensee's CAP as CR-RBS-2007-01496.

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures and Drawings," requires, in part, activities affecting quality shall be prescribed by documented instructions of a type appropriate to the circumstances. Contrary to the above, WO 00069577 failed to provide the instructions necessary to properly assembly the fitting on the Division I EDG governor cooling water return line. Because the finding was of very low safety significance and has been entered into the licensee's CAP as CR-RBS-2007-01496, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000458/2007002-04, "Inadequate Maintenance Instructions for Installation of a Compression Fitting." This LER is closed.

3. (Closed) LER 05000458/2006-003-00, "Automatic Start of Division II Standby Service Water System During Normal Service Water Pump Shift"

On April 4, 2006, while shifting running NSW pumps, Division II SSW automatically started on low NSW header pressure. The inspectors determined that this was a repeat of a similar event documented in LER 05000458/2003-006. The corrective actions taken for that event, as documented in CR-RBS-2003-02054, were to determine and proceduralize the necessary system conditions that operators should establish prior to shifting running NSW pumps to avoid an automatic start of SSW. On April 4, 2006, the operators established the conditions prescribed by the system procedure, but Division II SSW started during the NSW pump shift. The inspectors determined that the corrective actions for the 2003 event did not correct the condition adverse to quality. Following the 2006 event, the licensee added a time delay to the low pressure SSW automatic start circuits. This finding constitutes a minor violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," that is not subject to enforcement action Section IV of the NRC's Enforcement Policy. The licensee documented this event in CR-RBS-2006-01257. The LER is closed.

#### 4OA6 Meetings, Including Exit

##### Exit Meeting Summary

On January 12, 2007, the inspector presented the occupational radiation safety inspection results to Mr. J. Venable, Senior Vice President, and other members of licensee management who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On April 6, 2007, the resident inspectors presented the integrated baseline inspection results to Mr. J. Venable, Senior Vice President, and other members of licensee management. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

#### 4OA7 Licensee-Identified Violations

The following finding of very low safety significance was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a NCV.

- 10 CFR Part 50 Appendix B, Criterion XII, "Control of Measuring and Test Equipment," requires that instruments used in activities affecting quality are properly calibrated to maintain accuracy within necessary limits. Contrary to this, on January 10, 2007, the licensee used a degraded traversing in-core (TIP), Probe A, to calibrate associated LPRM detectors resulting in 16 local power range monitors being improperly calibrated. As a result, there was a reduction in the calculated margin to the core operating limits of one percent. An analysis of the condition concluded that at least five percent margin was maintained to the core operating limits during this period. TIP A was repaired and recalibrated on January 18, 2007, and the affected LPRM detectors were recalibrated on January 20, 2007. This finding is of very low safety significance because it only affected the fuel barrier. This condition was entered into the licensee's CAP as CR-RBS-2007-0208.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

L. Ballard, Manager, Quality Programs  
M. Davis, Manager, Radiation Protection  
T. Burnett, Acting Manager, Training and Development  
C. Bush, Manager, Outage  
J. Clark, Assistant Operations Manager - Training  
B. Matherne, Manager, Planning and Scheduling/Outage  
C. Forpahl, Manager, Corrective Action Program  
S. Wiles, Director, Engineering  
B. Heath, Acting Superintendent, Chemistry  
D. Heath, Health Physics Supervisor, Radiation Protection  
K. Higginbotham, Assistant Operations Manager - Shift  
B. Houston, Manager, Plant Maintenance  
A. James, Superintendent, Plant Security  
N. Johnson, Manager, Engineering Programs & Components  
J. Roberts, Director, Nuclear Safety Assurance  
J. Leavines, Manager, Emergency Planning  
D. Lorfing, Manager, Licensing  
J. Maher, Superintendent, Reactor Engineering  
W. Mashburn, Manager, Design Engineering  
J. Miller, Manager, Operations  
P. Russell, Manager, System Engineering  
J. Venable, Senior Vice President - River Bend Station  
E. Olson, General Manager - Plant Operations

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened and Closed

05000458/2007002-01	FIN	Failure to Implement Freeze Protection Compensatory Measures
05000458/2007002-02	FIN	Failure to Follow Maintenance Instructions
05000458/2007002-03	NCV	Failure to Promptly Identify and Correct a Degraded Residual Heat Removal System Valve
05000458/2007-002-04	NCV	Inadequate Maintenance Instructions for Installation of a Compression Fitting

#### Closed

05000458/2005-002-00	LER	Unplanned Automatic Actuation of Standby Service Water Due to Procedural Error
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05000458/2005-003-00 LER Operation Prohibited by Technical Specifications Due to Diesel Generator Malfunction

05000458/2006-003-00 LER Automatic Start of Division II Standby Service Water System During Normal Service Water Pump Shift

### **LIST OF DOCUMENTS REVIEWED**

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

#### **Section 2OS1: Access Controls to Radiologically Significant Areas**

##### Corrective Action Documents

2006-3337, 2006-4062, 2006-4149, 2006-04370, 2006-04387

##### Procedures

EN-RP-100, Radworker Expectations, Revision 0  
EN-RP-101, Access Control for Radiologically Controlled Areas, Revision 1  
PL-182, Radiation Protection Expectations and Standards, Revision 1  
RPP-0005, Performance of Radiological Surveys, Revision 21

#### **Section 2OS2: ALARA Planning and Controls**

##### Corrective Action Documents

2006-3122, 2006-3474, 2006-03643, 2006-03651

##### Radiation Work Permits

RWP-2006-1068, Repair G33-MOV F053, G33-VF060, AND G33-PVF033 including support work, LLRT, and Signature Testing

##### Procedures

EN-RP-105, Radiation Work Permits, Revision 0  
EN-RP-110, ALARA Program, Revision 0  
EN-WM-101, Planning, Revision 1  
EN-WM-105, On-Line Work Management Process, Revision 1

##### Miscellaneous

List of active radiation work permits  
List of radiation work permits with accrued dose greater than one person-rem since 7/17/06

## LIST OF ACRONYMS

ALARA	as low as reasonably achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	<i>Code of Federal Regulations</i>
CR	condition report
CR-RBS	River Bend Station condition report
EDG	emergency diesel generator
HPCS	high pressure core spray
LER	Licensee Event Report
LPCS	low pressure core spray
LPRM	local power range monitor
MC	inspection manual chapter
NEI	Nuclear Energy Institute
NCV	noncited violation
NRC	U.S. Nuclear Regulatory Commission
NSW	normal service water
PI	Performance Indicators
RBS	River Bend Station
RCIC	reactor core isolation cooling
RHR	residual heat removal
SOP	system operating procedure
SSC	structures, systems, and components
SSW	standby service water
STP	surveillance test procedure
TIP	traversing in-core probe
TS	Technical Specifications
USAR	Updated Safety Analysis Report
WO	work order