UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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October 11, 2002

Paul D. Hinnenkamp, Vice President - Operations
River Bend Station
Entergy Operations, Inc.
P.O. Box 220
St. Francisville, Louisiana 70775

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-458/02-03

Dear Mr. Hinnenkamp:

On September 28, 2002, the NRC completed an inspection at your River Bend Station. The enclosed report documents the inspection findings which were discussed on October 1, 2002, with you and other members of your staff.

This 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. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has identified an issue that was evaluated under the risk significance determination process as having very low safety significance (Green).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made 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 Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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

Sincerely,

/RA/

David N. Graves, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-458
License: NPF-47

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NRC Inspection Report
50-458/02-03

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-458
License:	NPF-47
Report:	50-458/02-03
Licensee:	Entergy Operations, Inc.
Facility:	River Bend Station
Location:	5485 U.S. Highway 61 St. Francisville, Louisiana
Dates:	July 30 through September 28, 2002
Inspectors:	P. J. Alter, Senior Resident Inspector J. D. Hanna, Acting Senior Resident Inspector M. O. Miller, Resident Inspector D. W. Schaefer, Physical Security Inspector P. A. Goldberg, Senior Engineering Inspector J. S. Dodson, Health Physics Inspector
Approved By:	D. N. Graves, Chief, Project Branch B
ATTACHMENT:	Supplemental Information

SUMMARY OF FINDINGS

River Bend Station
NRC Inspection Report 50-458/02-03

IR 05000458-02-03; on 07/30/2002-09/28/2002; Entergy Operations, Inc; River Bend Station. Integrated Resident & Regional Report. Identification and Resolution of Problems. One Green finding.

The inspections were conducted by the resident inspectors and three Regional office inspectors from security, engineering, and health physics. The inspections identified one Green finding. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. On August 15, 2002, the licensee performed a routine monthly performance test of the station blackout diesel generator. Four minutes into the one-hour run the diesel generator tripped on high coolant temperature. Similar failures of the station blackout diesel generator to run due to high temperature trips had occurred in each of the two previous monthly performance tests on June 21 and July 19, 2002. For each of these failures, the licensee identified an apparent cause for the failure and corrected the problems identified. Following the failure on August 15, 2002, the inspectors determined that the licensee-identified causes for the previous station blackout diesel generator failures were not accurate; therefore, the corrective actions taken were ineffective.

  The inspectors evaluated the ineffective corrective actions taken to correct two failures of the station blackout diesel generator using inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined that the finding was more than minor in that it affected the operability and availability of a risk-significant mitigating system, i.e., the station blackout diesel generator. The inspectors determined that the failure to maintain the station blackout diesel generator operable was of very low safety significance (Green) because of the low likelihood of a station blackout event occurring, the probability that operators could restore the diesel following an initial failure, and the availability of all other standby electrical systems. This problem identification and resolution issue was entered into the licensee's corrective action program as CR-RBS-2002-0664 (Section 4OA2).

B. Licensee-Identified Findings

One violation of very low significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear to be reasonable. This violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status: On June 30, 2002, the operators removed reactor recirculation Pump B from service, which reduced reactor power to 64 percent power. The plant was shut down on July 2, 2002, to enter the drywell to replace reactor recirculation system flow control valve Actuator B33-ACTD004B position indication. The reactor was restarted on July 3, 2002, and returned to 100 percent power on July 5, 2002. On September 18, 2002, the plant scrammed due to a failure of the main turbine control system. The reactor was restarted on September 20, 2002, and returned to 100 percent power on September 22. The reactor was operated at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

During the week of September 3, 2002, the inspectors reviewed the licensee's plant procedures used to protect mitigating systems from hurricane weather conditions. On September 26, 2002, the inspectors reviewed the implementation of plant procedures to protect mitigating systems in response to tropical storm Isidore.

Specifically the inspectors: (1) verified that selected systems and components would remain functional when challenged by hurricane weather conditions; (2) verified that hurricane weather features such as wind speed and flooding were monitored; (3) verified that plant features for operation of the ultimate heat sink during hurricane weather conditions were appropriate; and (4) evaluated implementation of the hurricane weather preparation procedures and compensatory measures for affected systems or components before the onset of and during hurricane weather conditions. The inspectors reviewed the following documents and procedures as part of this assessment:

- River Bend Nuclear Procedure RBNP-089, "Hurricane Readiness," Revision 3
- Abnormal Operating Procedure AOP-29, "Severe Weather Operation," Revision 14
- Emergency Implementing Procedure EIP-2-001, "Classification of Emergencies," Revision 11

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed safety-related system walkdowns to verify equipment alignment and discrepancies that impact the function of the system and potentially increase risk. The inspectors also verified that the licensee has properly identified and resolved equipment alignment problems that could impact mitigating system availability.

.1 Division 1 Standby Service Water System Walkdown

During the week of September 3, the inspectors performed a complete system walkdown of the Division I standby service water system. Specifically, the inspectors: (1) reviewed the listed documents to determine the correct system lineup; (2) reviewed outstanding maintenance action items (MAIs) to ensure that no deficiencies exist that could affect the ability of the system to perform its safety function; (3) reviewed outstanding design issues, temporary modifications, operator workarounds, and pending design changes; and (4) physically examined in-plant components and controls for the Division I standby service water system.

- System Operating Procedure SOP-0042, “Standby Service Water System,” Revision 19
- System Operating Procedure SOP-0016, “Reactor Plant Component Cooling Water System,” Revision 20A
- Updated Safety Analysis Report (USAR) Section 9.2.7, “Standby Service Water System”
- Technical Specifications Section 3.7.1, “Standby Service Water System and Ultimate Heat Sink”
- Standby service water system health report and maintenance rule report
- Engineering P & I Diagram, “System 256 Service Water - Standby,” Revision 19

Additionally, the inspectors sampled the licensee’s corrective action program to determine whether the licensee had identified equipment alignment problems at the appropriate threshold and evaluated the resolution for risk-significant systems. Condition reports (CR) reviewed included:

- CR-RBS-2002-0053, service water Pump SWP-P3D leak on mechanical seal
- CR-RBS-2002-00478, high pressure core spray diesel generator heat exchanger service water outlet piping noise and vibration
- CR-RBS-2001-01146, unexpected initiation of Division II standby service water system

.2 Division I Emergency Diesel Generator Walkdown

On August 14, 2002, the inspectors performed a partial system walkdown of the Division I emergency diesel generator while the Division III emergency diesel generator was out of service for routine maintenance. The inspectors reviewed piping and instrument Diagram PID-08-09A & 9B, "System 309, Diesel Generator," Revisions 12 and 17, respectively, to determine the correct system lineup. Then the inspectors walked down critical portions of the system to identify any discrepancies between the existing equipment lineup and the correct lineup.

.3 Division I Control Building Chilled Water System

On August 22, 2002, the inspectors performed a partial system walkdown of the Division I control building chilled water system while the Division II train was out of service for scheduled maintenance. The inspectors reviewed system operating Procedure SOP-066, "Control Building Chilled Water System," Revision 27, to determine the correct system lineup. Then the inspectors walked down critical portions of the system to identify any discrepancies between the existing equipment lineup and the correct lineup.

.4 Division II Reactor Plant Closed Cooling Water System

On August 27, 2002, the inspectors performed a partial system walkdown of Division II of the reactor plant closed cooling water system while the Division I train was out of service for scheduled maintenance. The inspectors reviewed piping and instrument Diagram PID-09-01B, "System 115, Closed Cooling Water - Reactor Plant," Revision 18, to determine the correct system lineup. Then the inspectors walked down critical portions of the system to identify any discrepancies between the existing equipment lineup and the correct lineup.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

.1 Fire Protection Area Walkdowns

Throughout the period the inspectors toured the following plant areas important to reactor safety to observe conditions related to: (1) licensee control of transient combustibles and ignition sources; (2) the material condition, operational lineup, and operational effectiveness of fire protection systems, equipment and features; and (3) the material condition and operational status of fire barriers used to prevent fire damage or fire propagation.

- Control Building, 98 foot elevation, Fire Zone C-10, on July 23, 2002
- Auxiliary Building, high pressure core spray room, Fire Zone AB-2/Z-1, on July 26, 2002
- diesel-driven fire Pump 1A Room, Fire Zone FP-1, on August 7, 2002
- Diesel Generator Building, 98 foot elevation, Fire Zone DG-4/Z-1, on August 12, 2002
- Fuel Building, 70 foot elevation, Fire Zone FB-1/Z-1, on August 12, 2002
- Reactor Building, 114 foot elevation, Fire Zone RC-3/Z-3, on August 14, 2002

The inspectors reviewed the following documents during the fire protection inspections:

- Pre-Fire Strategy Book
- USAR Section 9A.2, “Fire Hazards Analysis”
- River Bend postfire safe shutdown analysis

.2 Fire Drill

On August 13, 2002, the inspectors observed a fire brigade drill in the area adjacent to the main transformer switchyard to evaluate the readiness of the licensee’s personnel to prevent and fight fires. The inspectors verified that the preplanned drill scenario was followed and that the drill objectives acceptance criteria were met. Specific criteria that were evaluated, including the proper wear and use of self-contained breathing apparatus, clarity of communications used by fire brigade members, and hose lines capability of reaching the fire hazards.

.3 Identification and Resolution of Problems

The inspectors verified that the fire brigade members needing corrective lenses had them readily available during a drill on August 13, 2002. As documented in CR-RBS-2002-0012, not all fire brigade members had corrective lense inserts for self-contained breathing apparatus when required during previous fire brigade drills.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On August 28, 2002, the inspectors conducted a periodic assessment to determine whether the licensee's flooding mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspectors conducted a walkdown of the reactor fuel building. Specifically, the inspectors examined: (1) sealing surfaces of watertight doors, (2) sealing of equipment below design flood level, (3) sealing of penetrations in floors and walls, (4) operable sump pumps and level alarm circuits, (5) interconnections with common drain systems, and (6) sources of potential internal flooding from plant systems. The inspectors reviewed the following documents during the inspection:

- River Bend individual plant examination of external events
- USAR Section 3.4.1, "Flood Protection"
- G13.18.12.3*15, "Internal Flooding Screening Analysis"
- G13.2.3 PN-317, "Max Flood Elevations for Moderate Energy Line Cracks in Cat I Structures"

b. Findings

No findings of significance were identified.

1R07 Biennial Heat Sink Performance (71111.07)

.1 Performance of Testing, Maintenance, and Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's test and cleaning methodology for the residual heat removal system heat exchangers, the containment unit coolers, and auxiliary building room Coolers HVR-UC5, HVR-UC6, and HVR-UC9. In addition, the inspectors reviewed test data for the heat exchangers and design and vendor-supplied information to ensure that the heat exchangers were performing within their design bases. The inspectors also reviewed the heat exchanger inspection and test results. Specifically, the inspectors verified proper extrapolation of test conditions to design conditions, appropriate use of test instrumentation, and appropriate accounting for instrument inaccuracies. Additionally, the inspectors verified that the licensee appropriately trended these inspection and test results, assessed the causes of the trends, and took necessary actions for any step changes in these trends. The inspectors reviewed the methods and results of heat exchanger inspection and cleaning and verified that the methods used to inspect and clean were consistent with industry standards and that as-found results were appropriately dispositioned such that the final condition were acceptable.

b. Findings

No findings of significance were identified.

.2 Verification of Conditions and Operations Consistent with Design Bases

a. Inspection Scope

For the selected heat exchangers, the inspectors verified that the licensee established heat sink and heat exchanger condition, operation, and test criteria that were consistent with the design assumptions. Specifically, the inspectors reviewed the applicable calculations to ensure that the thermal performance test acceptance criteria for the heat exchangers were being applied consistently throughout the calculations. The inspectors also verified that the appropriate acceptance values for fouling and tube plugging for the residual heat removal heat exchangers remained consistent with the values used in the design-basis calculations. Finally, the inspectors verified that the parameters measured during the thermal performance tests for the residual heat removal system were consistent with those assumed in the design bases.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors verified that the licensee had entered significant heat exchanger/heat sink performance problems into the corrective action program.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On August 26, 2002, the inspectors observed simulator training of an operating crew, as part of the operator requalification training program, to assess licensed operator performance and the training evaluator's critique. Emphasis was placed on observing weekly evaluation exercises of high risk licensed operator actions, operator activities associated with the emergency plan, and lessons learned from industry and plant experiences. In addition, the inspectors compared simulator control panel configurations with the actual control room panels for consistency, including recent modifications implemented in the plant. Simulator training material reviewed during this inspection included:

- Simulator Instructor Guide RBS-1-SIM-STG-40211.00, Operator Requalification Training Module 11 2002, dated August 1, 2002

- Simulator Lesson Plan RBS-1-SIM-SMS-0623.02, "E22-S004 Fault/EHC Pressure Transmitter Fails Low/ATWS," dated July 30, 2002

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed structure, system, or component (SSC) performance problems to assess the effectiveness of the licensee's maintenance efforts for SSCs under the licensee's maintenance rule program. The inspectors reviewed the licensee's implementation of the Maintenance Rule (10 CFR 50.65) for the performance problems reviewed by answering the following questions: (1) was the SSC properly identified for monitoring in accordance with 10 CFR 50.65; (2) was the SSC assigned the proper safety significance; (3) were the problems characterized properly; (4) as a result of the problems, was the SSC assigned the proper classification under 10 CFR 50.65; and (5) were the appropriate performance criteria established for the SSC or, when necessary, were appropriate goals set and corrective actions taken to restore the SSC status under the maintenance rule. The following performance problems were evaluated:

- CR-RBS-2001-1693, containment ventilation system exceeded its maintenance rule availability performance criteria

- CR-RBS-2000-1257, reactor core isolation cooling system not meeting all the maintenance rule performance criteria

The following documents were reviewed as part of this assessment:

- NUMARC 93-01, "Nuclear Energy Institute Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2

- River Bend maintenance rule function list

- River Bend maintenance rule performance criteria list

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed maintenance activities to verify the performance of assessments of plant risk related to planned and emergent maintenance work activities. The inspectors reviewed: (1) the adequacy of the risk assessments and the accuracy and completeness of the information considered; (2) management of the resultant risk and implementation of work controls and risk management actions; and (3) effective control of emergent work, including prompt reassessment of resultant plant risk.

.1 Risk Assessment and Management of Risk

On a routine basis, the inspectors reviewed risk assessments performed in accordance with administrative Procedure, ADM-096, "Risk Management Program Implementation and On-Line Maintenance Risk Assessment," Revision 01, for planned maintenance activities involving SSCs within the scope of the maintenance rule. Specific activities evaluated included work on the Division II emergency diesel generator outage on July 24, 2002.

.2 Emergent Work Control

During emergent work, the inspectors verified that the licensee took actions to minimize the probability of initiating events, maintained the functional capability of mitigating systems, and maintained barrier integrity. The inspectors also reviewed the emergent work activities to ensure the plant was not placed in an unacceptable configuration. Specific emergent work activities evaluated included:

- Station blackout (SBO) emergency diesel generator out of service due to failed performance testing on July 19 and August 15, 2002
- Service water Pump P-7A out of service due to bearing failure on August 14, 2002

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events (71111.14)

a. Inspection Scope

1. Plant Shutdown for Forced Outage 02-01

The inspectors reviewed and observed personnel performance during the reactor shutdown for forced Outage 02-01, to replace the position indication for reactor recirculation flow control valve Actuator B33-ACTD004B, on July 1 and 2, 2002. The inspectors reviewed general operating Procedure GOP-02, "Power Decrease/Plant

Shutdown," Revision 25, and abnormal operating Procedure AOP-01, "Reactor Scram," Revision 19, used by the operators during the plant shutdown. In addition, the inspectors reviewed operator logs and plant computer data to determine what occurred and that operators responded in accordance with plant procedures and training.

2. Unanticipated Reactor Scram, September 18, 2002

The inspectors reviewed and observed personnel performance in response to a reactor scram on September 18, 2002. The inspectors also reviewed abnormal operating Procedure AOP-01, "Reactor Scram," Revision 19, used by the operators, in response to the scram. In addition, the inspectors reviewed operator logs, plant computer data, and strip charts, as documented in general operating Procedure GOP-03, "Scram Recovery," dated September 19, 2002, to determine the sequence of events and assess whether operators responded in accordance with plant procedures and training.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed three operability evaluations performed by the licensee for risk significant systems to determine whether operability was justified, availability was assured, and no unrecognized increase in risk had occurred. Specific areas evaluated included: (1) the technical adequacy of the evaluation; (2) whether other existing degraded conditions were considered; and (3) if operability was based on compensatory measures, were these measures in place, and would they work. The inspectors also reviewed River Bend nuclear Procedure RBNP-078, "Operability Determinations," Revision 6.

- CR-RBS-2002-0949, three lower dogs on flooding Door AB070-04 will not engage, reviewed August 30, 2002

- CR-RBS-2002-0955, service air Compressor SVV-C4A inoperable due to a malfunction, reviewed on August 30, 2002

- CR-RBS-2002-0989, reactor core isolation cooling minimum flow valve cycled partially open during surveillance testing of high pressure core spray system, reviewed on August 19, 2002

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (IP 71111.16)

f. Inspection Scope

An operator workaround is defined as a degraded or nonconforming condition that complicates the operation of plant equipment and is compensated for by operator action. On August 5, 2002, the inspectors reviewed the cumulative effect of the existing operator workarounds on: (1) the reliability, availability, and potential for misoperation of any mitigating system; (2) whether they could increase the frequency of an initiating event; and (3) their effect on the operation of multiple mitigating systems. In addition, the inspectors reviewed the cumulative effects the operator workarounds have on the ability of the operators to respond in a correct and timely manner to plant transients and accidents.

The inspectors reviewed the following documents:

- Operator Work Around Control Room Deficiency Program, Revision 9
- Equipment Status Turnover Sheet, dated August 1, 2002
- Operator Workaround Database, dated 7/31/02
- Focus of the Day Meeting main control room deficiency list, dated July 19, 2002
- Out-of-Specification Reading Database, dated 7/19/02

f. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the postmaintenance testing requirements specified for the MAIs listed below to determine whether testing activities were adequate to verify system operability and functional capability:

- MAI 356200, Division I standby service water valve operability test
- MAI 359485, SBO diesel generator functional test
- MAI 360525, Reactor recirculation flow control valve Actuator B33-ACTD004B position indicator replacement
- MAI 361541, Control Rod 20-53 hydraulic control unit rupture disc replacement
- MAI 363077, Standby gas treatment system filter Train A operability test

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

From July 2-5, 2002, the inspectors observed licensee forced Outage 02-01 planning and execution activities. The inspectors' review included scheduling, training, outage configuration management, reactivity controls, inventory controls, tag-out and maintenance activities. Specific activities monitored included:

- Reactor shutdown on July 2, 2002
- Maintenance to replace reactor recirculation system flow control valve Actuator B33-ACTD004A position indication
- Various portions of the reactor startup on July 3 and July 4, 2002

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated, by witnessing and reviewing test data, whether selected risk-significant systems and component surveillance tests met Technical Specification, USAR, and procedure requirements. The inspectors reviewed whether surveillance tests demonstrated that the systems were capable of performing their intended safety functions and provided operational readiness. The inspectors specifically evaluated surveillance tests for preconditioning, clarity of acceptance criteria, range, accuracy, and current calibration of test equipment, and whether equipment was properly restored at the completion of the testing. The inspectors reviewed and/or observed the following surveillance tests and surveillance test procedures (STP):

- STP-254-1401, “Division I Hydrogen Igniter Train Current and Voltage Check,” Revision 3, performed on July 8, 2002
- STP-309-0202, “Division II Diesel Generator Operability Test,” Revision 24, performed on July 24, 2002
- STP-109-6301, “Main Steam Quarterly Valve Operability Test,” Revision 11, performed on July 28, 2002
- STP-051-4560, “Condenser Vacuum Low Channel Functional Test,” Revision 4, performed on August 20, 2002

b. Findings

No findings of significance were identified.

Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency preparedness simulator training exercise conducted on July 17, 2002, and the quarterly training drill conducted on July 30, 2002, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors evaluated the licensee assessment of classification, notification, and protective action recommendation development for the simulator control room and the technical support center during the two training exercises. The following procedures and documents were reviewed during the assessments:

- EIP-2-001, “Classification of Emergencies,” Revision 11
- EIP-2-006, “Notifications,” Revision 27
- EIP-2-007, “Protective Action Guidelines Recommendations,” Revision 18
- River Bend Simulator Scenario RDRL-EP-0204, “Site Drill Manual Scenario No. 15,” Revision 0

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspector interviewed radiation workers and radiation protection personnel involved in high dose rate and high exposure jobs. The inspector conducted plant walkdowns within the controlled access area and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements:

- Area postings and other controls for airborne radioactivity areas, radiation areas, high radiation areas, high-high radiation areas, and very high radiation areas

- Radiation work permits (RWPs) and radiological surveys involving airborne radioactivity areas and high radiation areas
- Access controls and surveys for the following RWPs involving high radiation dose work: (RWP 2001-1060, 2001-1427, 2001-1800, 2002-1002, 2002-1007 and 2002-1012)
- Dosimetry placement for work involving a potential significant dose gradient
- Controls involved with the storage of highly radioactive items in the spent fuel pool for the following
- Quality Audit Reports QA-15-2001-RBS-1 and QA-19-2002-RBS-1
- Self-Assessments LO-RLO-2002-00010, 2002-00015, and 2002-00036
- Radiation Protection self-assessments for the first and second quarters of 2002
- Quality Surveillances QS-2001-RBS-038 and QS-2002-RBS-021
- A summary of access controls and high radiation area work practice related CRs written since October 2001 and selected specific examples: (CR-RBS-2002-00015, 00352, 00517, 00531, 00572, 01080, 01082, 01090, 01113, 01205, 01219, and 01234)

b. Findings

No findings of significance were identified.

3. SAFEGUARDS
Cornerstone: Physical Protection (PP)

3PP1 Access Authorization (71130.01)

a. Inspection Scope

The inspector performed the following inspection activities and compared them with applicable regulatory requirements:

- Reviewed licensee event reports and safeguards event logs to identify problems in the access authorization program
- Reviewed procedures, audits, and self-assessments for behavior observation, access authorization, fitness-for-duty, supervisor and escort training, and requalification training

- Interviewed five supervisors/managers and five individuals who had escorted visitors into the protected and/or vital areas to determine their knowledge and understanding of their responsibilities in the behavior observation program

- Reviewed CRs, licensee event reports, safeguards event logs, audits, selected security event reports, and self-assessments of the licensee's access authorization program to determine the licensee's ability to identify and resolve problems

- Interviewed security management concerning the use of overtime and plant limitations regarding maximum hours of weekly overtime for security officers to confirm potential worker fatigue issues were being adequately addressed per 10 CFR Part 26

b. Findings

No findings of significance were identified.

3PP2 Access Control (71130.02)

a. Inspection Scope

The inspector performed the following inspection activities and compared them with applicable regulatory requirements:

- Reviewed licensee event reports and safeguards event logs to identify problems with access control equipment

- Reviewed procedures and audits for testing and maintenance of access control equipment and for granting and revoking unescorted access to protected and vital areas

- Interviewed security personnel concerning the proper operation of the explosive and metal detectors, X-ray devices, and key card readers

- Observed licensee testing of access control equipment and the ability of security personnel to control personnel, packages, and vehicles entering the protected area

- Reviewed procedures to verify that a program was in place for controlling and accounting for hard keys to vital areas

- Reviewed the licensee’s process for granting access to vital equipment and vital areas to authorized personnel having an identified need for that access

- Reviewed CRs, licensee event reports, safeguards event logs, audits, selected security event reports, and self-assessments for the licensee's access control program in order to assess the licensee's ability to identify and resolve problems regarding the access control program

- Interviewed appropriate security department and plant support personnel to determine their knowledge and use of the corrective action reports and resolution of problems regarding repair of security equipment

b. Findings

No findings of significance were identified.

3PP3 Response to Contingency Events (71130.03)

The Office of Homeland Security developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. NRC Regulatory Information Summary (RIS) 2002-12a, "NRC Threat Advisory and Protective Measures System," dated August 19, 2002, discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the NRC issued a safeguards advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal government declaration of threat level "orange." Subsequently, on September 24, 2002, the Office of Homeland Security downgraded the national security threat condition to "yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspector interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level "orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspector completed the following actions and compared them to regulatory requirements:

- Reviewed “Physical Security Plan,” Revision 20, dated April 19, 2001; “Training and Qualification Plan,” Revisions 14 and 15, dated August 1, 2000, and March 2, 2001, respectively; and “Safeguards Contingency Plan,” Revision 9, dated April 5, 2001, to determine if requirements of 10 CFR 50.54(p) were met

- Reviewed the safeguards event logs from January 1, 2001, to August 1, 2002, and interviewed security personnel to determine their knowledge and use of the corrective action program and resolution of problems as it relates to making changes to the licensing documents

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors verified the accuracy and completeness of the data used to calculate and report performance indicator data for the last quarter of 2001 and the third quarter of 2002. The inspectors used Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0, as guidance and interviewed licensee personnel responsible for compiling the information. The following performance indicators were reviewed:

- Reactor coolant system leakage

- Safety system unavailability - high pressure core spray

- Safety system functional failures

- Occupational exposure control effectiveness

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual radiological effluent occurrences

- Protected area security equipment

- Personnel screening program performance

- Fitness-for-duty/personnel reliability program performance

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

.1 SBO Diesel Generator

a. Inspection Scope

The inspectors examined a sample of the licensee corrective action issues to provide an indication of the overall problem identification and resolution performance. Specifically, the inspectors examined CR-RBS-2002-1175, "SBO diesel generator tripped on high coolant temperature," to assess the licensee's identification of root and contributing causes. The licensee's problem identification determination was reviewed against the criteria in 10 CFR Part 50 Appendix B, Criterion XVI.

b. Findings

On August 15, 2002, the licensee attempted to perform a routine monthly performance test on the SBO diesel generator. Four minutes into the one hour run the diesel generator tripped on high coolant temperature. Similar failures of the diesel generator to run due to high temperature trips had occurred in each of the two previous monthly surveillance tests on June 21 and July 19, 2002. The licensee had concluded in both the June and July failures that the cause of the problem had been determined and corrected. The inspectors determined that the cause of previous SBO diesel generator failures had not been accurately determined and, hence, the corrective actions were ineffective. The SBO diesel generator was risk-significant for a loss of offsite power and a failure of the emergency diesel generators, i.e., SBO. The inspectors determined that the finding had very low risk significance (Green).

Following the discovery of the failure of the SBO diesel generator on August 15, 2002, the licensee performed extensive testing and analysis to determine the cause. The licensee's root cause analysis concluded that all three failures were caused by a malfunctioning valve in the cooling loop of the diesel engine. This failure had prevented normal coolant circulation through the standby jacket water heater assembly. The absence of proper coolant circulation caused the jacket water heater to remain continuously energized due to low heater inlet temperature. Continuous heater operation caused high heater outlet temperatures and/or coolant boiling, which resulted in voiding of the engine coolant return manifold and high coolant temperature in the engine coolant manifold. An automatic engine shutdown occurred as a result.

The inspectors determined that this event was a repeat of previous events when the SBO diesel generator was declared inoperable on June 21 and July 19, 2002. On these prior occurrences, the causes of the diesel generator failures were determined to be spurious actuation due to rainwater intrusion and inadequate venting of the upper portion of the engine coolant system, respectively. The corrective actions for CR-RBS-2002-853 and CR-RBS-2002-998 were to resolve the dryout of the high coolant temperature switch and vent the engine coolant manifold. The inspectors determined that these corrective actions were ineffective in that they did not prevent the recurrence of a similar event on August 15, 2002.

The inspectors evaluated the finding using inspection manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined that the finding was more than minor in that it affected the operability and availability of a risk-significant mitigating system, the SBO diesel generator. The inspectors determined that the failure to maintain the SBO diesel generator operable was of very low safety significance (Green) because of the low likelihood of a station blackout event occurring, the probability that operators could restore the diesel following an initial failure, and the availability of all other standby electrical systems. This problem identification and resolution issue was entered into the licensee's corrective action program as CR-RBS-2002-0664.

4OA3 Event Followup (71153)

(Closed) LER 50-459/2001-02-00 potential violation of maximum reactor power limit due to nonconservative error in core thermal power calculation software. The inspectors determined that this issue was minor and warranted no additional inspection.

4OA6 Management Meetings

Exit Meetings

The security inspector presented the security access authorization inspection results to Mr. P. Hinnenkamp, Vice President - Operations, and other members of licensee management at the conclusion of the inspection on August 8, 2002.

The engineering inspector presented the heat sink performance inspection results to Mr. R. Brian, Director of Engineering, and other members of licensee management at the conclusion of the inspection on September 19, 2002.

The health physics inspector presented the radiological access control inspection to Mr. R. King, Nuclear Safety Assurance Director, and other members of licensee management at the conclusion of the inspection on September 19, 2002.

The resident inspectors presented the inspection results to Mr. P. Hinnenkamp, Vice President - Operations, and other members of licensee management at the conclusion of the inspection period on October 1, 2002.

The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

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 noncited violation.

If you deny this noncited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, 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; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the River Bend Station facility.

Requirement Licensee Failed to Meet

10 CFR 20.1501(a) requires that each licensee shall make or cause to be made surveys that may be necessary to comply with the regulations, and are reasonable to evaluate the magnitude and extent of radiation levels and the potential radiological hazards. On April 18, 2002, during condensate filter replacement, maintenance personnel entered an area and worked on the condensate filter housing which had not been surveyed as described in the licensee's corrective action program as CR-RBS-2002-00572. Because it did not involve ALARA (as low as reasonably achievable) planning and controls, there was no personnel overexposure, there was no substantial potential for personnel overexposure, and the finding did not compromise the licensee's ability to assess dose, this violation is of very low significance and is being treated as a noncited violation.

ATTACHMENT

SUPPLEMENTARY INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

B. Allen, Emergency Preparedness Manager
R. Azzarello, Training and Development Manager
W. Brian, Director, Engineering
C. Bush, Superintendent, Operations
J. Fowler, Manager, Quality Assurance
P. Hinnenkamp, Vice President-Operations
H. Holmes, ALARA Coordinator, Radiation Protection
A. James, Security Superintendent
R. King, Director, Nuclear Safety Assurance
J. Leavines, Manager, Nuclear Safety and Regulatory Affairs
W. Mashburn, Manager, Engineering Programs
J. McGhee, Manager, Maintenance
D. Mims, General Plant Manager
J. Schlesenger, Design Engineering Supervisor
W. Trudell, Manager, Corrective Action and Assessment

ITEMS OPENED AND CLOSED

Opened

None

Closed

50-459/2001-02-00	LER	Potential violation of maximum reactor power limit due to nonconservative error in core thermal power calculation software (Section 4OA3)

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:

Calculations

G13.1.8.2.1*061, “Auxiliary Building Heat Loads and Unit Cooler Sizing Verification,” Revision 3

PB-210, “Heat Gain for Containment Outside Drywell,” Revision 2

T-G0006, “General Electric RHR Heat Exchanger Calculated Performance,” dated January 10, 1990

G 13.18.14.0*, “Post-Accident Heat Load for Power Uprate Service Water Evaluations,” Revision 1

PEP-0204, “Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D Heat Transfer Capacity Verification,” Revision 2

Surveillance Tests

PEP-0240, “Cycle 10, Performance Monitoring Program for the Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (Div II),” tested March 13, 2001

PEP-0240, Cycle 11, Performance Monitoring Program for the Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (Div II),” tested March 5, 2002

TP-00-0003, “RHR Division 2 Heat Exchanger Chemical Cleaning Procedure Side,” dated March 16, 2000

Condition Reports

CR-RBS-1997-1786	CR-RBS-2000-1721	LO-RLO-2002-0030
CR-RBS-1998-0794	CR-RBS-2002-0109	
CR-RBS-2000-0505	CR-RBS-2002-0376	

Procedures

PEP-0239, “Performance Monitoring Program for Residual Heat Removal Heat Changers E12-EB001A and E12-EB001C (Div I),” Revision 2

PEP-0240, “Performance Monitoring Program for the Residual Heat Removal Heat Exchangers E12-EB001B and E12-EB001D (Div II),” Revision 2

PEP-0227, “Performance Monitoring Program of Safety Related Auxiliary Building Unit Cooler 1HVR*UC5 (Div I),” Revision 2

PEP-0228, “Performance Monitoring Program of Safety Related Auxiliary Building Cooler HVR-UC6 (Div I),” Revision 4

PEP-0229, “Performance Monitoring Program of Safety Related Auxiliary Building Unit Cooler 1HVR*UC9 (Div II),” Revision 1

LIST OF ACRONYMS AND INITIALISMS USED

ALARA	as low as reasonably achievable
CFR	Code of Federal Regulations
CR	condition report
CR-RBS	River Bend Station Condition Report
HSAS	Homeland Security Advisory System
LER	licensee event report
MAI	maintenance action item
NRC	U. S. Nuclear Regulatory Commission
RIS	regulatory information summary
RWP	radiation work permit
SBO	station blackout
SSC	structure, system, or component
STP	surveillance test procedure
USAR	Updated Safety Analysis Report