



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005**

July 8, 2004

Joseph E. Venable
Vice President Operations
Waterford 3
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

**SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - NRC INTEGRATED
INSPECTION REPORT 05000382/2004003**

Dear Mr. Venable:

On June 26, 2004, the NRC completed an inspection at your Waterford Steam Electric Station, Unit 3. The enclosed report documents the inspection findings which were discussed on June 28, 2004, 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, a self-revealing finding was evaluated under the risk significance determination process as having very low safety significance (Green). This finding is described in the subject inspection report. If you contest the finding or significance of the finding, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. 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 Waterford Steam Electric Station, Unit 3 facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, 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).

Entergy Operations, Inc.

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

Sincerely,

/RA/

William B. Jones, Chief
Project Branch E
Division of Reactor Projects

Docket: 50-382
License: NPF-38

Enclosure:
NRC Inspection Report
050000382/2004003

w/attachment: Supplemental Information

cc w/enclosure:
Senior Vice President and
Chief Operating Officer
Entergy Operations, Inc.
P.O. Box 31995
Jackson, Mississippi 39286-1995

Vice President, Operations Support
Entergy Operations, Inc.
P.O. Box 31995
Jackson, Mississippi 39286-1995

Wise, Carter, Child & Caraway
P.O. Box 651
Jackson, Mississippi 39205

General Manager, Plant Operations
Waterford 3 SES
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

Manager - Licensing Manager
Waterford 3 SES
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

Entergy Operations, Inc.

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Chairman
Louisiana Public Service Commission
P.O. Box 91154
Baton Rouge, Louisiana 70821-9154

Director, Nuclear Safety &
Regulatory Affairs
Waterford 3 SES
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

Michael E. Henry, State Liaison Officer
Department of Environmental Quality
Permits Division
P.O. Box 4313
Baton Rouge, Louisiana 70821-4313

Parish President
St. Charles Parish
P.O. Box 302
Hahnville, Louisiana 70057

Winston & Strawn
1400 L Street, N.W.
Washington, D.C. 20005-3502

Technological Services Branch Chief
National Preparedness Division
FEMA Region VI
800 North Loop 288
Federal Regional Center
Denton, Texas 76201-3698

Electronic distribution by RIV:
 Regional Administrator (**BSM1M**)
 DRP Director (**ATH**)
 DRS Director (**DDC**)
 Senior Resident Inspector (**MCH**)
 Branch Chief, DRP/E (**WBJ**)
 Senior Project Engineer, DRP/E (**VGG**)
 Staff Chief, DRP/TSS (**PHH**)
 RITS Coordinator (**KEG**)
 Jennifer Dixon-Herrity, OEDO RIV Coordinator (**JLD**)
 WAT Site Secretary (**AHY**)
 EPPO (**JDA1**)

ADAMS: Yes No Initials: __WBJ__
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RIV:RI/DRP/E	SRI:DRP/E	C:DRS/PEB	C:DRS/PSB	C:DRS/OB
GFLarkin	MCHay	LJSmith	MPShannon	ATGody
E to WBJones	E to WBJones	/RA/	E to WBJones	E to WBJones
07/7/04	07/2/04	07/8/04	07/1/04	07/1/04
C:DRS/EMB	C:DRP/E			
JAClark	WBJones			
E to WBJones	/RA/			
07/7/04	07/8/04			

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-382
License No.: NPF-38
Report No.: 05000382/2004003
Licensee: Entergy Operations, Inc.
Facility: Waterford Steam Electric Station, Unit 3
Location: Hwy. 18
Killona, Louisiana
Dates: March 24 through June 26, 2004
Inspectors: M. C. Hay, Senior Resident Inspector
G. F. Larkin, Resident Inspector
D. L. Stearns, Project Engineer
Approved By: W. B. Jones, Chief, Project Branch E
ATTACHMENTS: Supplemental Information

Enclosure

SUMMARY OF FINDINGS

IR05000382/2004-003; 03/24/2004-06/26/2004; Waterford Steam Electric Station, Unit 3; Event Followup

The report covered a 13-week period of inspection by resident inspectors and a project engineer. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP 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 improper installation of an O-ring for Emergency Header Check Valve EH-1285. This resulted in an unisolable hydraulic fluid leak in the main turbine electro-hydraulic control system. Entergy elected to reduce reactor power to less than 20 percent and manually trip the main turbine on February 14, 2004.

This self-revealing finding is greater than minor because it is associated with the initiating event cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. The human performance attribute was affected in that the performance deficiency resulted in a perturbation in plant stability by reducing reactor power to less than 20 percent. Although the unisolable hydraulic leak resulted in a plant transient, the finding is of very low safety significance because it did not increase the likelihood of a primary or secondary system loss-of-coolant accident initiator, did not contribute to the loss of mitigation equipment functions, and did not increase the likelihood of a fire or internal/external flood (Section 4OA3).

B. Licensee-Identified Violations

Violations of very low safety significance, which were identified by Entergy have been reviewed by the inspectors. Corrective actions taken or planned by Entergy have been entered into Entergy's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

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REPORT DETAILS

Summary of Plant Status: The plant was operated at approximately 100 percent power from March 24 through May 20, 2004. Power was reduced to approximately 88 percent and restored to 100 percent on May 20, 2004, to conduct high-pressure turbine valve testing. Reactor power was maintained at approximately 100 percent throughout the remainder of the inspection period.

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

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed the status of Entergy's hurricane season preparations. The inspectors finished a walkdown of three areas inside and outside the plant on June 2, 2004. The walkdown included the following areas:

- Dry cooling towers and wet cooling towers (the ultimate heat sink)
- Electrical distribution switchyard, including the unit auxiliary and startup transformers
- Main turbine generator

The inspectors also reviewed Procedure W6.103, "Emergency Preparedness Hurricane Policy and Preparation/Response Guidelines," Revision 4; Operating Procedure OP-901-521, "Severe Weather and Flooding," Revision 4; and the Updated Final Safety Analysis Report, Section 3.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Equipment Alignments

a. Inspection Scope

The inspectors performed the following three partial system equipment alignment inspections during this inspection period:

- On April 5, 2004, the inspectors performed a partial equipment alignment inspection of emergency diesel generator Train B while emergency diesel generator Train A was inoperable. A review of select maintenance work orders and corrective action documents was performed to assess the material condition

Enclosure

and performance of emergency diesel generator Train A. System configuration was assessed using Operating Procedure OP-009-002, "Emergency Diesel Generator," Revision 18. A walkdown of accessible portions of the system was performed to assess material condition, such as system leaks and housekeeping issues, that could adversely affect system operability.

- On June 3, 2004, the inspectors walked down the accessible electrical and mechanical portions of shield building ventilation system Train B. The walkdown was completed while shield building ventilation system Train A was unavailable due to a planned system outage. The inspectors performed the walkdown using Procedure OP-008-008, "Shield Building Ventilation System," Revision 8.
- On June 15, 2004, the inspectors performed a partial walkdown of the mechanical and electrical components of a critical portion of high pressure safety injection system Train A. This walkdown was completed during scheduled maintenance that rendered Train B inoperable. System configuration was assessed using Operating Procedure OP-009-008, "Safety Injection System," Revision 16, as well as applicable sections of the Updated Final Safety Analysis Report.

b. Findings

No findings of significance were identified.

.2 Complete Equipment Alignment

a. Inspection Scope

The inspectors performed a complete alignment inspection of the control room envelope ventilation system. A walkdown of the mechanical and electrical components in the system was performed to verify that the system was configured and operated in accordance with operating procedures. The inspectors reviewed the system design requirements in the Updated Final Safety Analysis Report to verify the system's ability was adequate to provide operator protection for design basis events. The inspectors reviewed applicable design documentation and select condition reports to verify that degraded conditions were identified at the appropriate threshold and that corrective actions were adequate and implemented in a timely manner.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Fire Protection Inspections

a. Inspection Scope

The inspectors conducted six inspections to determine if Entergy had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capabilities, and maintained passive fire protection features in good material condition.

The following areas were inspected:

- Fire Zone RAB 33, 35, 36, 37, 38 and 39 on March 26, 2004
- Fire Zone RAB 15, 16, 17, 18, 19 and 23 on April 3, 2004
- Fire Zone RAB 31, 32, 33, 35, 36, 37, 38 and 39 on May 19, 2004
- Fire Zone RAB 15, 16, 17, 18, 19 and 23 on May 20, 2004
- Fire Zone RAB 1, 3, 5, 6, 7 and 8B on June 8, 2004
- Fire Zone RAB 1A, 5, 6, 7, 8B, Roof E and Roof W on June 18, 2004

b. Findings

No findings of significance were identified.

.2 Routine Fire Drill Inspection

a. Inspection Scope

The inspectors observed an unannounced fire drill performed on April 16, 2004. The simulated fire was located in the fire pump house. The inspectors assessed the fire brigade's performance in the following areas:

- Appropriate clothing donned in a timely manner
- Self-contained breathing apparatus properly worn and used
- Fire fighting preplan strategies were used
- The fire area was entered in a controlled manner
- Sufficient fire fighting equipment was brought to the scene
- Effective command and control provided by the fire brigade leader

The inspectors also reviewed the fire drill critique to verify that areas for improvement were properly identified and all the scenario objectives were met.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed a semiannual inspection of internal flood protection features in the reactor auxiliary building wing area. The inspection considered the room flood rate from inadvertent fire protection system sprinkler actuation and high and medium energy line breaks. Seismic analysis was reviewed for piping systems in these areas. The inspection included a review of the Updated Final Safety Analysis Report, selected design calculations, and a walkdown of flood protection features in the reactor auxiliary building wing area.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

Ultimate Heat Sink, Wet Cooling Tower Train B

a. Inspection Scope

The inspectors reviewed Entergy's test protocol, test procedure, vendor-supplied information, and test results for determining the thermal capability of wet cooling tower Train B. Specifically, the inspectors reviewed the test packages to verify proper extrapolation of test conditions to design conditions, appropriate use of test instrumentation, and appropriate accounting for instrument inaccuracies. The inspectors also verified that Entergy appropriately trended these inspection and test results, assessed the causes of the trends, and took necessary actions for any step changes in these trends.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

On May 18, 2004, the inspectors observed a licensed operator simulator training examination. During the examination, the inspectors evaluated the operator's ability to recognize, diagnose, and respond to a failed hot leg temperature instrument, steam generator tube leak, main turbine digital electro-hydraulic control system failure, followed by a steam generator tube rupture. The inspectors observed and evaluated the following areas:

- Understanding and interpreting annunciator and alarm signals
- Diagnosing events and conditions based on signals or readings
- Understanding plant systems
- Use and adherence of Technical Specifications

- Crew communications including command and control
- The crew's and evaluator's critiques

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

During the inspection period, the inspectors reviewed Entergy's implementation of the Maintenance Rule. The inspectors considered the characterization, safety significance, performance criteria, and the appropriateness of goals and corrective actions. The inspectors assessed Entergy's implementation of the Maintenance Rule to the requirements outlined in 10 CFR 50.65, and Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2. The inspectors reviewed the following three components and/or systems that displayed performance problems:

- Main steam system
- Feedwater system
- Main generator and 25 KV distribution system

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed risk assessments for planned or emergent maintenance activities to determine if Entergy met the requirements of 10 CFR 50.65(a)(4) for assessing and managing any increase in risk from these activities. The following four risk evaluations were reviewed:

- On April 6, 2004, during emergent repairs on main generator potential transformer Phase C cabinet closure mechanism
- On April 26, during emergent repairs on emergency diesel generator Train B
- On May 7-8, 2004 during emergent repairs on start up transformer Train A
- On June 24, 2004, during emergent repairs on main feedwater isolation valve hydraulic system Train A

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of five operability evaluations to verify that they were sufficient to justify continued operation of a system or component. The inspectors considered that, although equipment was potentially degraded, the operability evaluation provided adequate justification that the equipment could still meet its Technical Specification, Updated Final Safety Analysis Report, and design-bases requirements and that the potential risk increase contributed by the degraded equipment was thoroughly evaluated. The following evaluations were reviewed:

- Operability evaluation addressing single failure vulnerability of the reactor coolant pump overcurrent protection relays (Condition Report CR-WF3-2004-00948)
- Operability evaluation addressing single failure vulnerability of the charging system during a postulated small break loss of coolant accident (Condition Report CR-WF3-2004-1011)
- Operability evaluation addressing component cooling water make-up system margin requirements due to a valve leakage problem (Condition Report CR-WF3-2004-1068)
- Operability evaluation addressing control room envelope found to be in a degraded condition (Condition Report CR-WF3-2004-1165)
- Operability evaluation addressing ground on the startup transformer Phase A (Condition Report CR-WF3-2004-01361)

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed postmaintenance tests to verify system operability and functional capabilities. The inspectors considered whether testing met design and licensing bases, Technical Specifications, and Entergy's procedural requirements. The inspectors reviewed the testing results for the following six components:

- Charging pump Train B, following a planned maintenance outage on March 29, 2004
- Essential Chiller A/B, following a planned maintenance outage on May 5, 2004
- Control ventilation area system Train B, following a planned maintenance outage on May 17, 2004
- Shield building ventilation fan Train A, following bearing replacement on June 4, 2004
- Low-pressure safety injection pump Train B, following a planned maintenance outage on June 16, 2004
- SI EBKR3B-4, 4160 volt Magne-Blast Breaker, following a planned maintenance outage on June 16, 2004

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed or reviewed the following six surveillance tests to ensure the systems were capable of performing their safety function and to assess their operational readiness. Specifically, the inspectors considered whether the following surveillance tests met Technical Specifications, the Updated Final Safety Analysis Report, and Entergy's procedural requirements:

- Surveillance Procedure OP-903-046, "Emergency Feedwater Pump Operability Check," Revision 15, performed on March 30, 2004. This surveillance tested the operability of emergency feedwater system Pump B.
- Surveillance Procedure OP-903-068, "Emergency Diesel Generator and Subgroup Relay Operability Verification," Revision 13, performed on March 29, 2004. This surveillance tested the functional capability of emergency diesel generator Train B and the diesel fuel oil transfer pump.
- Nuclear Management Manual Procedure NDE 10.01, "VT-1 Inspections," Revision 3, performed on November 11, 2003. This nondestructive test evaluated the material condition of component cooling water piping supports in the L-wall pipe chase.

- Surveillance Procedure OP-903-030, "Safety Injection Pump Operability Verification," Revision 13, performed on April 8, 2004. This surveillance verifies the functional capability of high pressure safety injection Pump A.
- Calibration Procedure ME-005-052, "G.E. Undervoltage Relay, Model 121AV55C," Revision 10, performed on March 17, 2004. This procedure calibrates and functionally tests Safety Bus 3AB undervoltage relays.
- Surveillance Procedure OP-903-123, "Control Room Envelope Pressure Test," Revision 2, performed on June 17, 2004. This surveillance verifies that the control room envelope integrity is maintained greater than or equal to 0.125 inches water gage with a makeup flow rate less than 200 cfm.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On June 17, 2004, the inspectors reviewed the drill scenario and observed activities in the simulated control room, the Emergency Operations Facility, the Technical Support Center, and the Operations Support Center. The drill scenario simulated equipment failures, a site evacuation, a reactor core transient with leakage of reactor coolant, and the release of radioactive material offsite. The inspectors evaluated performance by focusing on the risk significant activities of emergency classification, notification and protective action recommendations. In addition, the inspectors reviewed the drill critiques and the resolution of identified performance weaknesses.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed licensee submittals for the performance indicators listed below for the period from the first quarter of 2003 through the first quarter of 2004. To verify the accuracy of the performance indicator data reported during that period, performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used.

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Mitigating Systems

- Safety System Unavailability (SSU) - High-Pressure Safety Injection System
- Safety System Unavailability (SSU) - Heat Removal System
- Safety System Unavailability (SSU) - Residual Heat Removal System

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Semi-Annual Assessment of Trends

a. Inspection Scope:

The inspectors performed a semi-annual review of select documentation to identify potential trends (either NRC or licensee identified) that might indicate the existence of a more significant safety issue.

b. Observations:

Recent NRC inspection reports have documented multiple issues resulting from poor engineering performance related to identification and resolution of problems. The inspectors noted that Entergy had recently performed an engineering self assessment and a corrective action program self assessment. These assessments identified that inattention to detail and improper self checking to ensure intended actions were correct and appropriately implemented were the primary causes for these types of deficiencies.

Specifically related to the engineering self assessment, that was performed in response to recently documented NRC inspection findings, Entergy identified the following issues:

- Engineering personnel are not consistently maintaining a long-term view of critical station margins, anticipating issues that could affect the margins, and developing strategies to resolve these issues.
- Engineering and design information provided to others is not being consistently verified to be accurate, complete, and of high quality. In addition, critical information (design inputs) used for decision making is not being consistently evaluated to assure validity.

The inspectors noted that Entergy has implemented a number of corrective actions to improve the performance of engineering with respect to identification and resolution of problems. No other trends were noted during this semi-annual trend assessment. The inspectors will continue to monitor Entergy's performance and assessments related to this trend.

4OA3 Event Followup (71153)

.1 Emergency Header Check Valve O-Ring Failure

a. Inspection Scope

On February 19, 2004, operators performed a reactor downpower to 20 percent and manually tripped the main turbine in response to a hydraulic leak affecting Main Steam Reheat Valve RS-210C. The inspectors assessed plant response to the transient conditions resulting from the turbine trip to verify safety systems performed appropriately. The inspectors reviewed Entergy's actions to identify and correct those degraded conditions that could impact plant stability.

b. Findings

Introduction. A Green self-revealing finding was identified involving improper installation of an O-ring for Emergency Header Check Valve EH-1285. This resulted in an unisolable fluid leak in the main turbine electro-hydraulic control system. In response to this event Entergy elected to reduce reactor power to less than 20 percent and manually trip the main turbine on February 14, 2004.

Description. On February 14, 2004, during the performance of Operating Procedure OP-903-007, "Inlet Valve Cycling Test," Reheat Interceptor Valve RS-210C failed to stroke close as expected. Entergy initiated repairs to Reheat Intercept Test Solenoid Valve RS ISV210C to correct the condition. While disassembling RS ISV0210C an unisolable hydraulic leak occurred at the valve body to bonnet joint. The hydraulic leak resulted in Entergy electing to reduce reactor power to 20 percent and manually trip the main turbine. Entergy's investigation revealed that the cause of the leak was an improperly assembled O-ring joint at an adjacent Emergency Header Check Valve EH-1285. This O-ring joint was assembled by the hydraulic actuator repair vendor during valve and actuator assembly rework in July 2001. The vendor has since added a visual inspection step in their valve assembly procedure to verify that the emergency trip header check valve O-ring is fully seated.

Analysis. The inspectors determined this finding is greater than minor because it is associated with the initiating event cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. The human performance attribute was affected in that the performance deficiency resulted in a perturbation in plant stability resulting in reducing reactor power from 100 percent to 20 percent. Although the condition resulted in a plant transient, the inspectors determined that it did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, did not contribute to the loss of mitigation equipment functions, and did not increase the likelihood of a fire or internal/external flood. Therefore, the failure to properly install Emergency Header

Check Valve EH-1285 O-ring was of very low safety significance (Green). Entergy documented this issue in their corrective action process as Condition Report CR-WF3-2004-0538 (FIN 50-382/0403-01, Improper Maintenance Activities resulting in Plant Down Power).

Enforcement. No violation of regulatory requirements occurred. The inspectors determined that the finding did not represent a noncompliance because it occurred on nonsafety-related secondary plant equipment.

.2 (Closed) Licensee Event Report 50-382/2003-002-00: Failure of Emergency Diesel Generator A Fuel Oil Line

On September 29, 2003, emergency diesel generator Train A was loaded to approximately 90 percent power and experienced a fuel line failure. This rendered the emergency diesel generator unavailable. This was determined to be a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," (See Inspection Report 2003-007, Section 40A3 and NRC Enforcement Action EA 03-230 for details). Using the significance determination process this issue was determined to have a low to moderate safety significance.

.3 (Closed) Licensee Event Report 50-382/2004-003-00: 10 CFR 50.46 Acceptance Criteria Exceeded for Small Break Loss of Coolant Accident Analysis

On March 31, 2004, Entergy identified that a different worst case single failure for the small break loss of coolant accident analysis could have resulted in exceeding a 10 CFR 50.46 acceptance criterion for peak cladding temperature of 2200 degrees Fahrenheit. This was determined to be a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," (see Section 40A7 for details.) This issue has been entered into Entergy's corrective action process as Condition Report CR-WF3-2004-1011.

40A5 Other Activities

Offsite Power System Operational Readiness (Temporary Instruction 2515/156)

a. Inspection Scope

The inspectors conducted a review of Entergy's actions to ensure the operational readiness of offsite power systems. This included an assessment of the offsite power sources in relation to the Maintenance Rule (10 CFR 50.65), Station Blackout (10CFR50.63), Offsite Power Operability (10 CFR Part 50, Appendix A, General Design Criterion 17; Appendix B, Criterion III; and Technical Specifications), and Corrective Actions (10 CFR Part 50 Appendix B, Criterion XVI).

The inspectors reviewed the processes used by the utility and the regional transmission organization to communicate current and projected grid conditions, switchyard maintenance activities, and nuclear plant maintenance. This included a review of risk

management actions including restrictions on maintenance activities during high-risk conditions, e.g., peak demand periods of summer months.

The inspectors also reviewed historical data for grid-related loss of offsite power events for the past 20 years. Entergy had one such event during December 1985. This event was related to severe weather resulting in a ground fault on the transmission line. The emergency diesel generators started and ran successfully during this event. The plant was in Mode 5 at the time and restoration of the offsite power occurred within 1 minute.

The inspectors reviewed the plants processes and procedures for monitoring grid and safety-related bus voltages during normal plant operation, shutdown conditions, and post trip conditions. The review included activities taken to ensure operability of the offsite power source. The inspectors also reviewed Entergy's calculations for minimum switchyard and safety-related bus voltage. The inspectors verified that Entergy's evaluation of grid conditions takes into account the impact of the loss of the plant on grid voltage.

The inspectors also reviewed Entergy's assessment of the August 2003 grid event. This industry operating experience event was entered into Entergy's corrective action program. The major corrective action from the assessment of the event was to improve communications between the plant and the Regional Transmission Organization.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. J. Venable, Site Vice-President and other members of Entergy's management at the conclusion of the inspection on June 28, 2004. Entergy acknowledged the findings presented. The inspectors asked Entergy whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following violations of very low safety significance (Green) were identified by Entergy and are violations of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned a noncited violation.

Cornerstone: Mitigating System

10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that "Measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions." Contrary to this, Entergy identified that the current Updated Final Safety Analysis Report analysis for a small break loss of coolant accident did not assume the single worst case failure (loss of a DC power bus). This condition could have resulted in eliminating charging flow to the reactor coolant system during an accident condition and challenging the peak cladding temperature acceptance criterion of 2200°F in 10 CFR 50.46. This was identified in Entergy's corrective action process as Condition Report CR-WF3-2004-01011. This finding is of very low safety significance because the design control deficiency did not result in loss-of-system function as described in Generic Letter 91-18.

Cornerstone: Barrier Integrity

10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that "Measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions." Contrary to this, Entergy identified during tracer gas testing of the control room envelope that three areas (the +35-foot cable spreading/cable vault rooms, the +46-foot switchgear ventilation equipment room, and the +46-foot reactor auxiliary building ventilation equipment room) were positively pressurized in respect to the control room envelope. The Updated Final Safety Analysis Report analysis stated that "The ventilation zones adjacent to the envelope are below or at atmospheric pressure, i.e., always negative with respect to the envelope, thereby assuring out leakage only." Tracer gas testing also revealed that unfiltered control room in leakage of 36 cfm in the pressurization mode exceeded the design basis of 13 cfm. This finding was greater than minor because it affected the barrier integrity cornerstone objective related to design control of the control room envelope. This was identified in Entergy's corrective action process as Condition Reports CR-WF3-2004-01065 and -01066. This finding is of very low safety significance because the design control deficiency did not result in loss of system function as described in Generic Letter 91-18.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

S. Anders, Superintendent, Plant Security
T. Brumfield, Manager, Quality Assurance
K. Walsh, General Manager, Plant Operations
C. Fugate, , Acting Manager, Operations
T. Gaudet, Director, Planning and Scheduling
B. Houston, Manager, Radiation Protection
R. Brian, Director, Engineering
J. Laque, Manager, Maintenance
R. Murillo, Engineer, Licensing
K. Cook, Manager, System Engineering
K. Peters, Director, Nuclear Safety Assurance/Emergency Preparedness
G. Sen, Manager, Licensing
T. Tankersley, Manager, Training
J. Venable, Vice President, Operations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-382/0403-01	FIN	Improper Maintenance Activities resulting in Plant Down Power
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Closed

50-382/0403-01	FIN	Improper Maintenance Activities resulting in Plant Down Power
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50-382/03-002-00	LER	Failure of Emergency Diesel Generator A Fuel Oil Line
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50-382/04-003-00	LER	10CFR50.46 Acceptance Criteria Exceeded for Small Break Loss of Coolant Accident Analysis
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LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignments

Procedures

Surveillance Procedure OP-008-008, "Shield Building Ventilation," Revision 8

Administrative Procedure, OP-100-009, "Control of Valves and Breakers," Revision 16

Surveillance Procedure OP-009-008, "Safety Injection System," Revision 16

Operating Procedure OP-009-003, "Control Room Heating and Ventilation (HVC)," Revision 7

Operating Procedure OP-002-010, "Reactor Auxiliary Building HVAC and Containment Purge," Revision 14

Operating Procedure OP-009-002, "Emergency Diesel Generator," Revision 18

Operating Procedure OP-003-026, "Cable Vault and Switchgear HVAC," Revision 7

Emergency Operating Procedure OP-902-009, "Standard Appendices," Revision 1.2

Administrative Operating Procedure OP-100-012, "Post Trip Review," Revision 6

Surveillance Procedure OP-903-123, "Control Room Envelope Pressure Test," Revision 2

Operating Procedure OP-901-401, "High Airborne Activity in Control Room," Revision 1

Condition Reports

CR WF3-2004-1704, CR WF3-1995-0406, CR WF3-2004-1044 CR WF3-2004-1044,
CR WF3-1997-0675, CR WF3-2004-1165, CR WF3-2004-1166, CR WF3-2004-1171, CR WF3-
2004-1185, CR WF3-2001-0888, CR WF3-2003-2115, CR WF3-2004-1232

Miscellaneous

NUREG-800, Chapter 3.6.1 Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment

Engineering Calculation EC-P99-002, "Moderate Energy Line Crack Evaluation for Circulating Water Line 7CW16-55 in the Cooling Tower Area," Revision 0

Engineering Calculation EC-S96-002, "Post-LOCA Dose Due to ESF System Leakage," Revision 0

Engineering Calculation EC-S96-006, "Radiological Doses Due to Failure of an WGDT and FHA," Revision A

Engineering Request ER-W3-97-0468, "Control Room Pressurization Testing," Revision 0

Section 1R05: Fire Protection

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Maintenance Procedure MM-007-010, "Fire Extinguisher Inspection and Extinguisher Replacement," Revision 13

Administrative Procedure UNT-005-013, "Fire Protection Program," Revision 9

Fire Protection Procedure FP-001-015, "Fire Protection System Impairments," Revision 17

Section 1R06: Flood Protection Measures

Procedures

Procedure OP-903-521, "Severe Weather and Flooding," Revision 3

Miscellaneous

Calculation MN(Q)-3-5, "Flooding Analysis Outside Containment," Revision 3

Engineering Request ER-W3-2004-0239, "Evaluation of Moderate Energy Non-Safety Related Piping in Safety Related Structures," Revision 0

Condition Reports

CR WF3-2004-1059, CR WF3-2004-0159, CR WF3-2004-1099,

Section 1R07Heat Sink Performance

Procedures

Technical Procedure PE-004-033, "Wet Cooling Tower A(B) Thermal Performance Test," Revision 0

Condition Reports

CR WF3-2004-1920

Miscellaneous

Engineering Report Number W3-ME-00-0001, "Wet Cooling Tower B Thermal Capability Test 4/6/00"

Engineering Report Number W3-ME-00-0002, "Wet Cooling Tower A Thermal Capability Test 4/10/00"

Engineering Report Number W3-ME-98-001-00, "Generic Letter 89-13 Wet Cooling Tower A and B Performance Test," dated 4/5/99

Engineering Report, "B Wet Cooling Tower Test 12/11/01 Thermal Performance Analysis Cooling Tower Institute Code ATC-105"

Performance Test Design Specification Document for the Waterford SES, Unit 3 Wet Cooling Tower "B", dated 3/26/97

EPRI-TR-107397, "Service Water Heat Exchanger Testing Guidelines," Revision March 1998

Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment" Cooling Technology Institute Code Tower Standard Specification, "Acceptance Test Code for Water Cooling Towers," Revision February 2000

Section 1R12: Maintenance Rule Implementation

Procedures

ME-005-644, "Feedwater Isolation Valve A or B operational Check FW MVAAA184 A or B," Revision 9

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Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

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Surveillance Procedure OP-901-501, "PMC or Core Operating Limit Supervisory System Malfunction," Revision 6

Surveillance Procedure OP-903-033, "Cold Shutdown IST Valve Tests," Revision 17

Condition Reports

CR WF3-2003-3997, CR WF3-2004-0016, CR WF3-2004-0973, CR WF3-2004-0551, CR WF3-2003-1794, CR WF3-2004-0016, CR WF3-2004-0955,

Miscellaneous

Calculation EC-M00-006, "Closure Time Analysis for Main Feedwater Isolation Valves FW-184A(B)," Revision 0

Section 1R15: Operability Evaluations

Procedures

Operating Procedure OP-009-003, "Emergency Feedwater," Revision 11

Miscellaneous

Calculation EC-I91-003, "Emergency Feedwater Condensate Storage Pool Level Loop Uncertainty," Revision 2

Engineering Request ER-W3-99-0083EFW, "Quantity for Chapter 15 Events," Revision 0
Calculation EC-M97-006, "Design Basis for CCW Makeup," Revision A

Design Basis Document W3-DBD-003, "Emergency Feedwater System"

Design Basis Document W3-DBD-004, "Auxiliary Component Cooling Water"

Calculation EC-M97-006, "Makeup Requirements for CCW Makeup System," Revision 2

Calculation ECSO4-010, Revision 0, "LOCA and FHA Dose Consequences for Post Tracer Gas Test Operability"

Condition Reports

CR WF3-2003-3882, CR WF3 2004-0053, CR WF3 2003-2452, CR WF3-2004-1068,

Section 1R19: Post-Maintenance Testing

Procedures

Maintenance Procedure ME-004-131, "4.16 kV G.E. Magne-Blast Breaker," Revision 13

Maintenance Procedure ME-005-052, "G.E Undervoltage Relay, Model 121AV55C,"
Revision 10

Surveillance Procedure OP-008-008, "Shield Building Ventilation," Revision 8

Surveillance Procedure OP-903-003, "Charging Pump Operability Check," Revision 11

Condition Reports

CR WF3-2003-3705, CR WF3-2004-0737, CR WF3-2004-0986, CR WF3-2003-3705, CR WF3-
2003-3705, CR WF3-2003-3705, CR WF3-2003-3705, CR WF3-2003-3705, CR WF3-2003-3705,

Work Orders

50969962, 50971155, 35734, 31680, 39034, 32636, 32197, 33276, 31629

Section 1R22: Surveillance Testing

Procedures

Nuclear Management Manual Procedure NDE10.01, "VT-1 Inspections," Revision 3

Surveillance Procedure OP-903-046, "Emergency Feed Pump Operability Check," Revision 15

Surveillance Procedure OP-903-068, "Emergency Diesel Generator and Subgroup Relay Operability Verification," Revision 13

Surveillance Procedure OP-903-030, "Safety Injection Pump Operability Check," Revision 13

Condition Reports

CR WF3-2003-0023, CR WF3-2003-0342, CR WF3-2004-0026, CR WF3 2004-0524, CR WF3-2004-0249, CR WF3-2004-0994, CR WF3-2003-3784

Miscellaneous

Engineering Calculation EC-M98-069, "HPSI System Performance surveillance Requirement Basis," Revision 1

Work Orders

18148, 436869, 50689752, 50690395, 50689752, 50691150

40A2 Identification and Resolution Of Problems

Assessments

WLO-2004-020, "Emergency Diesel Fuel Oil Assessment,"
WLO-2004-011, "Problem Identification and Resolution Assessment,"
QA-19-2004-WF3-1, "Quality Assurance Audit Report"
NRC Inspection Report 05000382/2004-002
NRC Inspection Report 05000382/2004-006

Section 40A3 Event Follow up

Condition Reports

CR WF3-2000-1047, CR WF3-2004-0538

Miscellaneous

Westinghouse Paper I.L. 1250-4006A, "Reheat Stop Valve Actuator

Work Orders

418753

40A5 Other Activities

ME-004-021, Revision 11, Maintenance Procedure Emergency Diesel Generator

MI-005-490, Revision 4, Emergency Diesel Generator Control System Calibration And Maintenance

MM-003-041, Revision 3, Six-Year Emergency Diesel Engine Inspection

OP-009-002, Revision 18, Change 3, Emergency Diesel Generator

OP-903-066, Revision 7, Change 3, Electrical Breaker Alignment Check

OP-903-068, Revision 13, Change 3, Emergency Diesel Generator and Subgroup Relay Operability Verification

OP-903-115, Revision 8, Change 0, Train A Integrated Emergency Diesel Generator/Engineering Safety Features Test

PE-005-031, Revision 2, Change 1, Emergency Diesel Dual Start Test

OP-902-003, Revision 4, Change 0, Loss of Offsite Power/Loss of Forced Circulation Recovery Procedure

CR WF3-1996-01079, Grid Voltage 226KV - Less than required value

CR WF3-1997-01345, "B" Train LOOP occurred, Mode 5

CR WF3-2004-00645, Switchyard Breaker S7176 has a minor SF6 Leak.
UFSAR Section 8.1, Electric Power

UFSAR Section 8.2, Offsite Power System

Response to SOER 99-01, Loss of Grid

Policy PL-158, Revision 1, Switchyard and Transmission Interface Requirements
Policy PL-159, Revision 0, Summer Reliability Plan

Inter-Office Correspondence W3C4-03-0002, Switchyard/Offsite Power Interface

Technical Specifications 3/4.8, Electrical Systems

LIST OF ACRONYMS

NRC	Nuclear Regulatory Commission
PDR	Public Document Room
CFR	Code of Federal Regulations
CFM	Cubic Feet per Minute