



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

June 19, 2000

Charles M. Dugger, Vice President
Operations - Waterford 3
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

SUBJECT: WATERFORD-3 -- NRC INSPECTION REPORT NO. 50-382/00-04

Dear Mr. Dugger:

On May 13, 2000, the NRC completed an inspection at your Waterford Steam Electric Station, Unit 3, facility. The enclosed report presents the results of this inspection. The results of this inspection were discussed on May 17, 2000, with you and other members of your staff.

This inspection was an examination of 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 a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the ADAMS Public Library component on the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Linda J. Smith, Chief
Project Branch E
Division of Reactor Projects

Docket No.: 50-382
License No.: NPF-38

Enclosure:
NRC Inspection Report No.
50-382/00-04

Entergy Operations, Inc.

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cc w/enclosure:

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Only inspection reports to the following:

D. Lange (**DJL**)
 NRR Event Tracking System (**IPAS**)
 WAT Site Secretary (**AHY**)
 Wayne Scott (**WES**)

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-382
License No.: NPF-38
Report No.: 50-382/00-04
Licensee: Entergy Operations, Inc.
Facility: Waterford Steam Electric Station, Unit 3
Location: Hwy. 18
Killona, Louisiana
Dates: April 2 through May 13, 2000
Inspectors: T. R. Farnholtz, Senior Resident Inspector
J. M. Keeton, Resident Inspector
J. F. Melfi, Project Engineer, Project Branch E
Approved By: L. J. Smith, Chief, Project Branch E

ATTACHMENTS:

Attachment 1: Supplemental Information
Attachment 2: NRC's Revised Reactor Oversight Process

Report Details

Summary of Plant Status:

The plant began this inspection period at 100 percent power and maintained that level throughout the inspection period.

1 REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments (71111.04)

.1 Walkdown of High-Pressure Safety Injection (HPSI) System Train A

a. Inspection Scope

The inspectors performed a partial walkdown of HPSI System Train A at a time when HPSI System Train B was being used to fill a safety injection tank. Plant procedures and drawings were used to verify correct system lineup and adequate separation between the two trains.

b. Issues and Findings

There were no findings identified during this inspection.

.2 Walkdown of Containment Cooling Systems

a. Inspection Scope

The inspectors performed a partial walkdown of the Containment Spray Systems A and B and Containment Fan Coolers A, B, and D following a mechanical failure of Containment Fan Cooler C. Plant procedures and drawings were used to verify mechanical and electrical alignments for the systems.

b. Issues and Findings

There were no findings identified during this inspection.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors conducted tours, assessed the material condition of passive and active fire suppression systems, and reviewed for any transient combustible material in the following areas:

- component cooling water pump rooms, reactor auxiliary building stairwells and corridors, and charging pump rooms;

- emergency diesel generator rooms and relay rooms; and
- fuel handling building refueling floor.

b. Issues and Findings

There were no findings identified during this inspection.

1R07 Heat Sink Performance (71111.07)

Wet Cooling Tower B Test

a. Inspection Scope

The inspectors observed portions of the Wet Cooling Tower B test, reviewed the test results, and discussed the test results with responsible engineering personnel. The wet cooling towers are the ultimate heat sink.

b. Issues and Findings

There were no findings identified during this inspection.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors observed the conduct of evaluated simulator scenarios for two control room operating crews. The crews were evaluated in the simulator control room using the same scenario.

b. Issues and Findings

There were no findings identified during this inspection.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the maintenance rule data for the following:

- Reactor coolant system as it applied to Reactor Coolant Pump 2B. The inspectors reviewed the maintenance history, interviewed the system engineers, and assessed the accuracy of availability, failure classification, and performance criteria.
- Containment heating, ventilation, and air conditioning system as it applies to Containment Fan Cooler C. This fan cooler failed during this inspection period. The inspectors reviewed the maintenance history, interviewed the maintenance rule coordinator, and assessed the adequacy of the system performance criteria.

- Emergency feedwater system as it applies to Flow Control Valve EFW-224B. The pneumatic booster relay associated with this valve failed during this inspection period. The inspectors reviewed the maintenance history, interviewed the system engineer, and assessed the adequacy of the availability, failure classification, and performance criteria.

b. Issues and Findings

There were no findings identified during this inspection.

1R13 Maintenance Work Prioritization (71111.13)

.1 Ultimate Heat Sink Flow Control Valve

a. Inspection Scope

The inspectors reviewed the work control package and prioritization of repairs to Ultimate Heat Sink Flow Control Valve ACC-126B and verified that the licensee took appropriate steps to plan and control the emergent work activity.

b. Issues and Findings

There were no findings identified during this inspection.

.2 Switchyard Repairs

a. Inspection Scope

The inspectors evaluated the risk assessment for switchyard repairs that removed one offsite power supply line. The inspectors verified that the work was controlled and that the risk assessments were appropriate. The inspectors discussed potential risk with work management personnel.

b. Issues and Findings

There were no findings identified during this inspection.

.3 Emergency Core Cooling System Train A Maintenance

a. Inspection Scope

The inspectors reviewed the work control, planning, and scheduling packages for the planned maintenance performed on emergency core cooling system Train A components. The inspectors reviewed the work prioritization and the plant safety index calculation for this work.

b. Issues and Findings

There were no findings identified during this inspection.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the operability evaluations associated with the following condition reports:

- 2000-0311 Reactor Coolant Pump-2B Lower Guide Bearing Temperature Increase
- 2000-0346 Main Feedwater Isolation Valve Accumulator Pressure Greater Than 5200 psig

b. Issues and Findings

There were no findings identified during this inspection.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed and evaluated the postmaintenance tests for the following:

- Auxiliary Component Cooling Water Pump A in accordance with Procedure OP-903-050, Revision 16, "Component Cooling Water and Auxiliary Component Cooling Water Pump and Valve Operability Test."
- HPSI Pump B. The postmaintenance testing was performed following completion of planned maintenance on this component.
- Charging Pump B following a planned equipment outage. An in-service test was conducted in accordance with Procedure OP-903-003, Revision 10, "Charging Pump operability." Pump pressures, flows, and vibrations were obtained and recorded.

b. Issues and Findings

There were no findings identified during this inspection.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Activities

a. Inspection Scope

The inspectors observed all or part of the following surveillance activities, which were performed to verify compliance with the Technical Specifications:

- Procedure OP-903-046, Revision 14, "Emergency Feed Pump Operability Check," of Pump AB.
- Procedure OP-903-068, Revision 12, "Emergency Diesel Generator and Subgroup Relay Operability Verification," for Emergency Diesel Generator A.
- Procedure OP-903-030, Revision 13, "Safety Injection Pump Operability Verification," for High-Pressure Safety Injection Pump B.

b. Issues and Findings

There were no findings identified during this inspection.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the technical adequacy of the temporary modification package and 10 CFR 50.59 screening for installation and operation of diesel sump pumps in Dry Cooling Towers A and B basins. The licensee implemented the temporary modification in accordance with ER-W3-99-0763, "Installation, Operation and Maintenance of Dry Cooling Tower Temporary Diesel Driven Sump Pumps."

b. Issues and Findings

There were no findings identified during this inspection.

Emergency Preparedness (EP)

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors reviewed the licensee emergency plan drill scenario, observed operator performance in the simulator, and reviewed the drill critique and resolution of performance weaknesses. This drill was conducted on April 19, 2000.

b. Issues and Findings

There were no findings identified during this inspection.

4 OTHER ACTIVITIES

40A2 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed the performance indicator data for “Scrams with Loss of Normal Heat Removal.” This performance indicator is included in the initiating events cornerstone.

b. Issues and Findings

There were no findings identified during this inspection.

40A3 Event Followup (71153)

.1 (Closed) Licensee Event Report (LER) 50-382/98-016-00: Failure to Meet Technical Specification Requirements for Reactor Trip Bypasses:

The licensee determined that the setpoints for the high log power bypass automatic removal had not been verified as required by Technical Specifications 2.2.1 and 3.3.1. However, the licensee had implemented the surveillance requirement by considering 1E-4 percent as a nominal value; the calibration and surveillance procedures provided a tolerance that implemented the general intent of the Technical Specification within the limits of the safety analysis.

The inspectors concluded that the actual and potential safety consequence resulting from the failure to implement the surveillance was minor and not subject to enforcement. This deficiency was included in the corrective action program as Condition Report 981031.

.2 (Closed) LERs 50-382/ 98-020-00 and -01: Surveillance Requirements Performed Late due to a Technical Specification Change Implementation Error. These LERs reported that certain core power distribution surveillance requirements were incorrectly scheduled. These were:

<u>SURVEILLANCE REQUIREMENT</u>	<u>AREA</u>	<u>FREQUENCY</u>
SR 4.2.3.2.d	Azimuthal Power Tilt	Once per 31 days
SR 4.3.1.1	RCS flow rate with COLSS OPERABLE	Once per 31 days
SRS 4.2.1.3; 4.2.3.2.c; 4.2.4.3	COLSS Alarm Verification	Once per 31 days

Time interval tracking had been incorrectly applied when calculating surveillance test due dates. The licensee verified that, although they were performed late, the surveillances met the acceptance criteria. The licensee modified their program to implement the surveillance requirements fully. The inspectors concluded that the actual and potential safety consequence resulting from the failure to implement the surveillance was minor and not subject to enforcement. This deficiency was included in the corrective action program as Condition Report 981522.

4OA4 Other

The inspectors reviewed the following LERs and determined that the issues described in the LERs were previously addressed. These LERs were also evaluated with the significance determination process and were green in either Phase 1 or 2 of the significance determination process. No further action is required.

- (Closed) LER 50-382/ 99-006-00: Uncomplicated Automatic Reactor Trip Following Loss of 7kV Bus. The event reviewed is described in NRC Inspection Report 50-382/99-13, Section O1.2.
- (Closed) LER 50-382/99-013-00: Exceeded the Technical Specification Limits for Reactor Coolant System Cooldown Rates. Documented in NRC Inspection Report 50-382/99-16, Sections O4.3, and a noncited violation was issued.
- (Closed) LER 50-382/ 99-015-00: Technical Specification Noncompliance while Raising Reactor Coolant System Pressure due to Inadequate Shift Communication. Reviewed in NRC Inspection Report 50-382/99-23, Section O4.1, and a noncited violation was issued.

4OA5 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management on May 17, 2000. 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.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. K. Brandon, Manager, Licensing
R. F. Burski, Director, Site Support
J. R. Douet, Manager, Maintenance
C. M. Dugger, Vice-President, Operations
E. C. Ewing, General Manager, Plant Operations
R. M. Fili, Manager, Quality Assurance
C. Fugate, Manager, Technical Services
J. D. Hunsaker, Manager, Site Support
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J. M. O'Hern, Manager, Training and Emergency Planning
E. Perkins, Jr., Director, Nuclear Safety and Regulatory Affairs
L. N. Rushing, Manager, Mechanical and Civil Engineering
B. Thigpen, Director, Planning and Scheduling
A. J. Wrape, Director, Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-382/98-016-00	LER	Failure to Meet Technical Specification Requirements for Reactor Trip Bypasses (Section 4OA3)
50-382/98-020-00 and -01	LER	Surveillance Requirements Performed Late due to a Technical Specification Change Implementation Error (Section 4OA3)
50-382/99-006-00	LER	Uncomplicated Automatic Reactor Trip Following Loss of 7kV Bus (Section 4OA4)
50-382/99-013-00	LER	Exceeded the Technical Specification Limits for Reactor Coolant System Cooldown Rates (Section 4OA4)
50-382/99-015-00	LER	Technical Specification Noncompliance While Raising RCS Pressure due to Inadequate Shift Communication (Section 4OA4)

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
HPSI	high-pressure safety injection
LER	licensee event report
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation

DOCUMENTS REVIEWED

Procedures -

OP-009-008, "Safety Injection System," Revision 15
OP-009-001, "Containment Spray," Revision 10
OP-008-003, "Containment Cooling System," Revision 5
Test Procedure PE-004-033, "Wet Cooling Tower A(B) Thermal Performance Test," Revision 0
Maintenance Action Item (MAI) 416200, "Flow Control Valve ACC-126B"

Drawings -

G-167 "Safety Injection System"
G-163, "Containment Spray"
G-853, Sheet 2, "Containment Cooling and Ventilation"

ATTACHMENT 2

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the significance determination process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.