



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

December 11, 2000

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

**SUBJECT: WATERFORD 3 INSPECTION REPORT NO. 50-382/00-11**

Dear Mr. Dugger:

This refers to the routine resident inspection conducted on October 1 through November 18, 2000, two radiation protection inspections conducted on October 9-13, and on October 24-27, 2000, and an inservice inspection conducted from October 24-27, 2000, at the Waterford Steam Electric Station, Unit 3, facility. The enclosed report presents the results of this inspection. The results of this inspection were discussed on October 13, October 27, November 21, and December 8, 2000, with you and 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. The inspectors reviewed selected procedures and records, observed activities, and conducted interviews with personnel. Specifically, the report focused on reactor safety, radiation protection, inservice inspection, and refueling outage activities.

Based on the results of this inspection, one issue involving ineffective communications between control room operators, which resulted in the low temperature overpressure protection system actuating, was evaluated under the significance determination process and was determined to be of very low safety significance (Green). This issue has been entered into your corrective action program and is discussed in the summary of findings and in the body of the attached inspection report.

In accordance with 10 CFR 2.790 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/NRC/ADAMS/index.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 Nos.: 50-382  
License Nos.: NPF-38

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NRC Inspection Report No.  
50-382/00-11

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Only inspection reports to the following:

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DOCUMENT NAME: R:\\_WAT\2000\WT2000-11RP-TRF.wpd

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-382  
License No.: NPF-38  
Report No.: 50-382/00-11  
Licensee: Entergy Operations, Inc.  
Facility: Waterford Steam Electric Station, Unit 3  
Location: Hwy. 18  
Killona, Louisiana  
Dates: October 1 through November 18, 2000  
Inspectors: T. R. Farnholtz, Senior Resident Inspector  
J. M. Keeton, Resident Inspector  
J. S. Dodson, Health Physicist  
C. A. Clark, Reactor Inspector  
Approved By: W. B. Jones, Chief, Project Branch E

ATTACHMENTS:

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

## SUMMARY OF FINDINGS

IR05000382-00-11; on 10/01-11/18/00; Entergy Operations, Inc.; Waterford Steam Electric Station; Unit 3; Integrated Resident & Regional Report; ISI Act., Maint. Risk Assess & Emer. Work Eval., Op. Evals., Refuel. & Outage Act., Access Cont. to Rad. Sig. Areas, ALARA Plan & Cont.

The report covers a 7-week period of resident inspection and announced inspections by two regional reactor inspectors. The significance of issues is indicated by their color (green, white, yellow, or red) and was determined by the significance determination process in Inspection Manual Chapter 0609.

### Cornerstone: Initiating Event

- Green. With the reactor coolant system in a solid condition, the licensee performed a calibration of the pressurizer pressure, wide-range, Channel A instrument. During this calibration, the primary nuclear plant operator observed what he thought to be lowering reactor coolant system pressure based on the instrument being calibrated. He took action to raise pressure which resulted in lifting the low temperature overpressure protection relief valves which relieved approximately 50 gallons to the containment sump. The operator failed to confirm the apparent pressure condition using other installed instrumentation. A human performance cross-cutting issue was identified involving ineffective communications between control room operators that resulted in the primary nuclear plant operator not being aware of the calibration activity and reliance on a single pressure instrument for pressure control.

The inspectors assessed this event using the reactor safety significance determination process. The inspectors found that the event had very low safety significance because the plant systems and components, while challenged, operated as expected and there were multiple sources of reactor coolant system inventory makeup (Section 1R15).

## Report Details

Summary of Plant Status: The plant was at 100 percent power at the beginning of this inspection period. On October 14, 2000, operators shut down the plant to begin Refueling Outage 10. Following completion of outage activities, operators brought the reactor critical at 5:16 a.m. on November 16, 2000, and synchronized the main generator to the electrical grid at 11:57 a.m. on November 17, 2000. Operators continued to escalate power through the end of the inspection period.

### **1 REACTOR SAFETY**

Initiating Events, Mitigating Systems, Barrier Integrity (R)

#### 1R04 Equipment Alignment (71111.04)

##### .1 Protected Train A Electrical Equipment

###### a. Inspection Scope

The inspectors reviewed the electrical alignment of the protected train electrical equipment after declaring Train A as the protected train and starting maintenance activities on Train B equipment. The inspectors verified that all Technical Specification required equipment was in the appropriate state of readiness.

###### b. Issues and Findings

No findings of significance were identified.

##### .2 Shutdown Cooling Train A

###### a. Inspection Scope

The inspectors verified that operators maintained the alignment of the protected shutdown cooling train, Train A, in accordance with Procedure OP-009-005, "Shutdown Cooling System," Revision 14, following core reload and prior to removal of Shutdown Cooling Train B for planned maintenance activities. The inspectors verified that Technical Specification requirements had been met.

###### b. Issues and Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Hourly Fire Watch Verification

a. Inspection Scope

The inspectors toured the reactor auxiliary building and emergency switchgear rooms accompanied by the fire protection engineers. The inspectors focused on specific areas that had an hourly firewatch established. The inspectors also assessed the material condition of the active and manual fire suppression systems and verified that they were in accordance with Procedure OP-009-004, "Fire Protection," Revision 11, in the additional plant areas listed below.

b. Findings

No findings of significance were identified.

.2 Reactor Auxiliary Building

a. Inspection Scope

The inspectors toured the reactor auxiliary building protected train areas and assessed the material condition of the active and manual fire suppression systems. The inspectors also verified that combustible materials associated with outage activities were appropriately controlled.

b. Issues and Findings

No findings of significance were identified.

.3 Reactor Containment Building

a. Inspection Scope

The inspectors toured the reactor containment building and assessed the material condition of the active and manual fire suppression systems. The inspectors verified that the reactor coolant pumps had an oil collection system to prevent oil leakage into the reactor containment atmosphere and that combustibles were appropriately controlled.

b. Issues and Findings

No findings of significance were identified.



.4 Reactor Auxiliary Building Switchgear, Relay Rooms, and Cable Spreading Rooms

a. Inspection Scope

The inspectors toured the reactor auxiliary building switchgear, relay rooms, and cable spreading rooms and observed the material condition of the active and manual fire suppression systems.

b. Issues and Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors reviewed the Waterford Steam Electric Station 2000 Refuel 10 Inservice Inspection Program activities to verify that the program for monitoring degradation of the reactor coolant system boundary was effective. As part of this review the inspectors:

- Reviewed a sample of the contractor nondestructive examination procedures and certification documentation for equipment and examination personnel.
- Reviewed the status of Program Section CEP-ISI-001, "Waterford 3 Steam Electric Station Inservice Inspection Plan," Revision 9, issued for the second interval.
- Reviewed Waterford Quality Assurance Audit Reports SA-2000-008.1, "Engineering Programs," issued June 22, 2000, and SA-99-010.1, "Special Processes Control," issued July 28, 1999.
- Reviewed Waterford Quality Assurance Surveillance Reports QS-2000-W3-092, "VT-2 Examination of Emergency Feedwater System Train A," issued August 8, 2000; QS-99-033, "Steam Generator Eddy Current Testing for Refuel Outage 9," issued June 14, 1999; and QS-99-012, "Welding Services, Inc., Repair of Pressurizer Nozzles," issued April 28, 1999.
- Reviewed a sample of completed Refuel 10 inservice inspection examination records, 8 visual testing examinations, 3 magnetic particle examinations, 23 liquid penetrant examinations, and 43 ultrasonic testing examinations.
- Reviewed a sample of condition reports issued for concerns identified in the inservice inspection area from 1999 Refuel 9 to the current 2000 Refuel 10.
- Reviewed four completed ASME Boiler and Pressure Vessel Code, Section XI, repair and replacement packages.
- Observed portions of ultrasonic testing examinations performed on seven welds.

b. Observations and Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors observed the conduct of a simulator scenario for a shift crew in preparation for reactor startup following Refueling Outage 10. The inspectors interviewed several operators with respect to their expectations of reactor response during the approach to criticality and raising power. The inspectors reviewed the startup scenario.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

.1 Maintenance Rule Application to Emergency Feedwater Pump A/B

a. Inspection Scope

The inspectors reviewed the status of the turbine-driven emergency feedwater pump to determine if the maintenance rule scope for this system had been appropriate. The inspectors reviewed the maintenance history and verified that the performance criteria for the (a)(2) category classification was appropriate based on the pump availability records and lack of maintenance preventable functional failures.

b. Issues and Findings

No findings of significance were identified.

.2 Maintenance Rule Application to Static Uninterruptible Power Supplies

a. Inspection Scope

The inspectors reviewed the status of the vital static uninterruptible power supplies to determine if the maintenance rule scope for this system had been appropriate. Condition Report 2000-1396 had identified repeat failures of bypass breakers. The inspectors reviewed the final safety analysis report and Technical Specification requirements and verified that the (a)(2) category was appropriate based on operational history of the vital static uninterruptible power supplies. The inspectors determined that the bypass breakers were not risk significant.

b. Issues and Findings

No findings of significance were identified.

.3 Maintenance Rule Application to Mechanical Snubbers

a. Inspection Scope

The inspectors reviewed the status of the seismic mechanical snubbers on the main steam header to determine if the maintenance rule scope for this system had been appropriate. Condition Report 2000-1436 had identified five failures of the mechanical snubbers supporting the main steam lines downstream of the main steam isolation valves. The inspectors reviewed the Technical Specification requirements and Procedure MM-007-011, "Mechanical Snubber Test," Revision 9, and verified that the (a)(2) category was appropriate.

b. Issues and Findings

No findings of significance were identified.

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

.1 Scaffolding in Component Cooling Water Heat Exchanger Room A

a. Inspection Scope

The inspectors noted several scaffolds had been erected in the heat exchanger room with some in close proximity to risk significant components. The inspectors reviewed Procedure PMC-002-006, "Installation Procedure Erecting Scaffold," Revision 1, and Scaffold Requests RF10-26542, -26652, and -26060 to determine that appropriate risk assessments had been made. The inspectors also discussed the evaluations with the responsible field engineer.

b. Findings

No findings of significance were identified.

.2 Maintenance on Emergency Feedwater Pump A/B

a. Inspection Scope

The inspectors reviewed Maintenance Action Items 414706 and 421706 to determine the extent of work planned. The inspectors verified that appropriate long-term risk assessments had been considered for the as-left conditions.

b. Issues and Findings

No findings of significance were identified.

.3 Maintenance on Auxiliary Feedwater Pump

a. Inspection Scope

The inspectors interviewed the responsible engineer and reviewed the troubleshooting plan to address the unexpected overcurrent trips experienced by the auxiliary feedwater pump to determine the extent of work planned. The inspectors verified that appropriate long-term risk assessments had been considered for the as-left conditions.

b. Issues and Findings

No findings of significance were identified.

.4 Charging Pump B Emergent Work

a. Inspection Scope

The inspectors interviewed the responsible operators and reviewed the maintenance documentation to address the Charging Pump B problems to determine the extent of work planned. The inspectors verified that appropriate long-term risk assessments had been considered.

b. Issues and Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Nonconservative Technical Specification for Essential Chilled Water Outlet Temperature

a. Inspection Scope (71111.15)

The inspectors reviewed the operability evaluation associated with Condition Report 2000-1117, which described a condition where Technical Specification Surveillance Requirement 4.7.12.1 was nonconservative in that it did not adequately protect a design-basis assumption in the associated engineering calculation.

b. Issues and Findings

No findings of significance were identified.

.2 Reactor Containment Building Exterior Moisture Barrier

a. Inspection Scope

The inspectors reviewed the operability evaluation for Condition Report 2000-1279. During inspections of the exterior moisture barrier, corrosion on the reactor containment

building steel containment vessel was identified. The inspectors interviewed the responsible engineering personnel to assess the reasoning for determining that the reactor containment building remained operable.

b. Issues and Findings

No findings of significance were identified.

.3 Inadvertent Reactor Coolant System Pressure Transient

a. Inspection Scope

The inspectors reviewed the operability evaluation written in response to Condition Report 2000-1247. This condition report described an event where the reactor coolant system pressure was inappropriately raised, resulting in a challenge to the low temperature overpressure protection relief valves.

b. Issues and Findings

On October 17, 2000, the plant was in Mode 5 with the reactor coolant system being maintained in a solid condition as part of the planned refueling outage. Reactor coolant system temperature was approximately 170°F and pressure was 345 psia with two reactor coolant pumps running and both trains of shutdown cooling in operation. Instrumentation and control technicians commenced a planned calibration of the pressurizer pressure, wide-range, Channel A instrument under Maintenance Action Item 413333. The control room supervisor was made aware of this activity. The primary nuclear plant operator was monitoring reactor coolant system pressure using the plant monitoring computer point displaying the pressurizer pressure, wide-range, Channel A instrument.

The primary nuclear plant operator observed a decreasing trend in the displayed reactor coolant system pressure. He interpreted this to be indicative of an actual condition and took action to raise system pressure by adjusting the letdown back-pressure regulator. The actual cause of the decreasing pressure was that the displayed instrument was being calibrated. The actual reactor coolant system pressure was not decreasing as indicated on the computer display.

The action taken by the primary nuclear plant operator resulted in an increase in reactor coolant system pressure. Pressure continued to rise until reaching the low temperature overpressure protection relief valve setpoint of 415 psig (430 psia). Pressure remained at that level for approximately one minute and was then returned to the normal band by readjusting the letdown back-pressure regulator. Volume control tank level and containment sump level changes indicated that the low temperature overpressure protection relief valve had lifted and passed approximately 50 gallons of water.

The inspectors reviewed this event and made several observations. It was inappropriate for the pressurizer pressure instrument calibration to be performed at a time when the reactor coolant system was in a solid condition. Due to ineffective communications

between control room operators, the control room supervisor was aware of the calibration activity but the primary nuclear plant operator was not. The primary nuclear plant operator was observing only one reactor coolant system pressure instrument and took action based on that one indication instead of verifying the condition using other installed instruments. A human performance cross-cutting issue was identified involving ineffective communications between control room operators and reliance on a single pressure instrument for pressure control.

The licensee generated Condition Report 2000-1247 to document this event and place it in their corrective action program. The operability evaluation associated with this condition report was adequate. The low temperature overpressure protection relief valves operated as expected to protect the reactor coolant system and the shutdown cooling systems. The valves reseated as expected to maintain plant conditions within the required band.

The inspectors assessed this event using the reactor safety significance determination process. The inspectors found that the event had very low safety significance because the plant systems and components, while challenged, operated as expected and there were multiple sources of reactor coolant system inventory makeup.

1R19 Postmaintenance Testing (71111.19)

.1 Startup Transformer A

a. Inspection Scope

The inspectors reviewed the postmaintenance testing conducted on Startup Transformer A and associated components since extensive maintenance had been performed on this equipment. The postmaintenance testing included a walkdown and inspection of the repairs performed and a check of the distribution breakers. The licensee completed testing in accordance with Procedures OP-903-001, "Technical Specification Surveillance Logs," Revision 22, and OP-903-066, "Electrical Breaker Alignment Check," Revision 7.

b. Findings

No findings of significance were identified.

.2 Emergency Feedwater Pump A/B

a. Inspection Scope

The inspectors reviewed the postmaintenance testing conducted on the turbine-driven emergency feedwater pump. Maintenance had been performed on the overspeed trip mechanism. The inspectors also reviewed the completed data sheets from Procedure MM-003-016, "Emergency Feedwater Pump Turbine Mechanical Overspeed Trip and Calibration," Revision 4, and verified that the surveillance acceptance criteria had been met.

b. Issues and Findings

No findings of significance were identified.

.3 Postmaintenance Testing on Emergency Diesel Generator B

a. Inspection Scope

The inspectors reviewed the postmaintenance testing conducted on Emergency Diesel Generator B. Relay 2CD2 had been replaced to prevent loss of generator excitation during the cooldown cycle. The inspectors also reviewed the completed data sheets from Procedure OP-009-002, "Emergency Diesel Generator," Revision 17, to verify that the acceptance criteria had been met.

b. Issues and Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the Refueling Outage 10 outage plan and risk assessment to determine the level of risk and plant equipment available during the course of the outage. Portions of the plant cooldown process were observed. The inspectors monitored the licensee's control of outage activities including the following:

- Monitored outage configuration management including the activities of the operational risk assessment team that assessed the outage plan from a risk viewpoint.
- Verified risk significant clearance tags to ensure they were properly prepared and hung. These included Shutdown Cooling System B (Low Pressure Safety Injection Pump B) and Emergency Feedwater Pump A/B.
- Verified reactor coolant system level instrumentation used during midloop operations was installed properly and functioned as expected. Continuously monitored reduced inventory and midloop operations to ensure the requirements of Generic Letter 88-17 were met.
- Reviewed plant electrical lineups to ensure that the designated protected train was maintained.
- Monitored shutdown cooling system operating parameters to ensure they were maintained within the required range.
- Verified that the spent fuel pool and associated support equipment performed as required to maintain temperature and level within specifications.

- Verified reactor coolant system inventory control and reactivity control measures were adequate.
- Verified that containment closure could be accomplished within required times during various portions of the outage.

In addition, the inspectors observed several risk significant plant operations, including reactor vessel head lift, reactor fuel offload to the spent fuel pool, and work performed on Reactor Coolant Pump 2B. Portions of the plant heatup and startup activities were observed to ensure that conditions were within Technical Specification requirements.

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Main Steam Safety Valves

a. Inspection Scope

The inspectors observed setup and portions of a scheduled surveillance test of main steam safety valves. The licensee conducted the test in accordance with Procedure MM-007-015, "Main Steam Safety Valve Test," Revision 6. The inspectors also reviewed the completed data sheets and verified that the surveillance acceptance criteria had been met.

b. Findings

No findings of significance were identified.

.2 Overspeed Trip Test of Emergency Feedwater Turbine

a. Inspection Scope

The inspectors observed setup and portions of a scheduled uncoupled overspeed trip test of turbine-driven emergency feedwater turbine. The test was conducted in accordance with Procedure MM-003-016, "Emergency Feedwater Pump Turbine Mechanical Overspeed Trip and Calibration," Revision 4. The initial surveillance test failed and required corrective maintenance to be performed.

b. Issues and Findings

No findings of significance were identified.



.3 Emergency Diesel Generator B Integrated Loss Of Offsite Power

a. Inspection Scope

The inspectors observed setup and portions of the emergency diesel integrated test. The test was conducted in accordance with Procedure OP-903-016, "Train B Integrated Emergency Diesel Generator/Engineering Safety Features Test," Revision 7. The inspectors verified that the licensee: (1) considered the risks associated with the effects of the test, (2) performed the test in the appropriate sequence, (3) completed and reviewed test data to ensure requirements had been met, and (4) verified acceptance criteria had been met.

b. Issues and Findings

No findings of significance were identified.

.4 Control Element Assembly Timed Insertion Test

a. Inspection Scope

The inspectors observed setup and performance of a scheduled control element assembly timed insertion test. The test was conducted in accordance with Procedure NE-002-020, "CEA Insertion Time Measurement," Revision 6. The inspectors reviewed the procedure, acceptance criteria, 1/M plots, and test data for completeness and accuracy.

b. Issues and Findings

No findings of significance were identified.

**2 RADIATION SAFETY**

Occupational Radiation Safety

2OS1 Access Control to Radiological Significant Areas (71121.01)

a. Inspection Scope

Radiation workers and radiation protection personnel were interviewed concerning their radiation protection work requirements. A number of tours of the radiologically controlled area were conducted. The following items were reviewed and compared with regulatory requirements:

- Access controls and surveys for three high dose work areas in the radiologically controlled area: spent resin transfer pump room, resin transfer valve gallery, and fuel building refueling deck.

Job-in-progress reviews could not be verified. No work was being performed in areas less than 1 rem per hour in which collective worker exposures exceeded 1 person-rem. Therefore, this aspect of the above procedure could not be verified.

- Radiation work permits and specified electronic pocket dosimeter setpoints.
- Placement of personnel dosimetry.
- Radiation postings and barricades used at entrances to high dose rate areas, high radiation areas, and very high radiation areas.
- Job coverage by radiation protection personnel.
- Radiation protection prejob briefing for the chemical volume control system spent resin transfer.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspectors interviewed radiation workers and radiation protection personnel involved in high dose rate and high exposure jobs in the controlled access areas during Refueling Outage 10. Independent radiation surveys of selected work areas within the controlled access areas were conducted. The following items were reviewed and compared with regulatory requirements to determine whether the licensee had an adequate program to maintain occupational exposure as low as is reasonably achievable (ALARA):

- ALARA program procedures.
- Processes used to estimate and track exposures.
- Plant collective exposure history for the past 3 years, current exposure trends, and 3-year rolling average dose information.
- Eighteen radiation work permit packages for Refueling Outage 10 work activities that had resulted in the highest personnel collective exposures during the inspection period.
- Five high exposure jobs or work in high radiation areas were observed during the inspection that included: Steam Generator 1 sludge lance setup at the hand hole, Steam Generator 2 secondary inspection at the hand hole, pressurizer nozzle repairs, Steam Generators 1 and 2 eddy current inspections, and refueling operations.

- Use of engineering controls to achieve dose reductions.
- Individual exposures of selected work groups (health physics, operations, engineering, construction, planning, quality assurance, and mechanical maintenance).
- Hot spot tracking and reduction program.
- Plant-related source term data, including source term control strategy.
- Radiological work planning.
- One quality assurance audit (QA-14-2000-W3-1) and one quality surveillance (QS-2000-W3-110).
- Selected corrective action documents involving higher than planned exposure levels and radiation worker practice deficiencies (Condition Reports 2000-0600, 2000-0607, 2000-0748, 2000-0889, 2000-0905, 2000-0907, 2000-1059, 2000-1221, and 2000-1317).
- ALARA Committee meeting minutes (7/06/2000, 8/29/2000).
- Declared pregnant worker dose monitoring controls.

b. Findings

No findings of significance were identified.

**4 OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

.1 Annual Effluent Release Performance Indicator

a. Inspection Scope

The inspectors reviewed corrective action program records for locked high radiation areas, very high radiation areas, and unplanned exposure occurrences for the past 12 months to confirm that these occurrences were properly recorded as performance indicators. Radiologically controlled area exit transactions with exposures greater than 100 millirem for the past 12 months were reviewed and selected examples were investigated to determine whether they remained within the dose projections of the governing radiation work permits. Additionally, radiological effluent release program corrective action records, licensee event reports, and annual effluent release reports documented during the past 4 quarters were reviewed to determine if any events exceeded the performance indicator thresholds.

b. Findings

No findings of significance were identified.

.2 Safety System Performance Indicator

a. Inspection Scope

The inspectors reviewed the performance indicator data for safety system unavailability - heat removal system for the third quarter, 2000. This performance indicator is included in the mitigating systems cornerstone.

b. Issues and Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summaries

- .1 The health physicist inspector presented the inspection results to Mr. C. M. Dugger, Vice President, Operations, and other members of licensee management at the conclusion of the inspection on October 13, 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.

- .2 The health physicist inspector and the reactor inspector presented the inspection results to Mr. C. M. Dugger, Vice President, Operations, and other members of licensee management at the conclusion of the inspections on October 27, 2000. The licensee acknowledged the findings presented.

The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

- .3 The resident inspectors presented the inspection results to Mr. C. M. Dugger, Vice President, Operations, and other members of licensee management at the conclusion of the inspection on November 21, 2000, with clarification of the inspection results provided on December 8, 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

### Supplemental Information

#### PARTIAL LIST OF PERSONS CONTACTED

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L. Dautat, Supervisor, Health Physics  
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B. Fron, Superintendent, Plant Security  
C. Fugate, Manager, Technical Support  
P. Gropp, Manager, Design Engineering  
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T. P. Lett, Superintendent, Radiation Protection  
R. McLendon, Supervisor, Health Physics  
J. M. O'Hern, Manager, Training and Emergency Planning  
E. P. Perkins, Jr., Director, Nuclear Safety Assurance  
O. Pipkins, Senior Engineer, Licensing  
J. A. Ridgel, Manager, Plant Maintenance  
L. N. Rushing, Manager, System Engineering  
B. Thigpen, Manager, Planning and Scheduling

##### Discussed

NONE

#### LIST OF ACRONYMS USED

ALARA	as low as is reasonably achievable
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
NRC	Nuclear Regulatory Commission
PDR	Public Document Room

DOCUMENTS REVIEWED

Radiation Work Permits: 1999-3028, 1999-3040, 1999-3046, 2000-0003, 2000-0022, 2000-1013, 2000-1129, 2000-1510, and 2000-1511

Condition Reports: 1999-0728, 1999-0751, 1999-0770, 1999-0813, 1999-0883, 1999-0973, 1999-1221, 1999-1227, 1999-1248, 1999-1278, 2000-0049, 2000-0085, 2000-0132, 2000-0171, 2000-0407, 2000-0474, 2000-0737, 2000-0765, 2000-0774, 2000-0783, 2000-0818, 2000-0873, 2000-0874, 2000-0891, 2000-0894, and 2000-0955

Radiation Protection Self Assessment Reports: 9/13/1999, 10/19-20/1999, 10/30/1999, 11/2/1999, 2/1/2000, and 3/7-8/2000

Quality Assurance Audits: SA-99-009.1 and QA-14-2000-W3-1

Quality Assurance Surveillances: QS-99-095, QS-99-103, QS-2000-012, QS-2000-035, QS-2000-049, QS-2000-057, QS-2000-W3-109, and QS-2000-W3-110; 1999 Annual Effluent Release Report

Station Operating Manual Procedures:

UNT-001-013, "Radiation Protection Manual," Revision 0  
HP-001-107, "Control of Access to High Radiation Areas," Revision 13  
HP-001-110, "Radiation Work Permits," Revision 18  
HP-001-213, "Control of Reactor Containment Building Power Entries," Revision 11  
HP-001-219, "Radiological Posting Requirements," Revision 17  
HP-002-201, "Radiological Survey Techniques and Frequencies," Revision 13

Procedures

CEP-ISI-001	Waterford 3 Steam Electric Station Inservice Inspection Plan	Revision 9
QAP-378	Radiographic Examination of Welds for ASME, AWS, B 3.1 Components	Revision 3
QAP-388	Ultrasonic Thickness Measurement	Revision 5
QAP-390	Ultrasonic Examination Similar and Dissimilar Metal Piping Welds (Section XI)	Revision 4
QAP-393	Manual Ultrasonic Examination of Welds in Vessels	Revision 3
QAP-408	Automated Ultrasonic P-SCAN Examination of Ferritic and Austenitic Piping Weld (ASME Sect. XI)	Revision 0
NDE9.04	Ultrasonic Examination of Ferritic Piping Welds (ASME Section XI)	Revision 2

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NDE9.07	Straight Beam Ultrasonic Examination of Bolts and Studs	Revision 2
NDE9.19	Ultrasonic Instrument Linearity Verification	Revision 2
NDE9.21	Manual Ultrasonic Weld/Wall Thickness Profile	Revision 3
NDE9.23	Ultrasonic Examination of Austenitic Piping Welds (ASME Section XI)	Revision 2
NDE9.24	Manual Ultrasonic Examination of the Reactor Vessel Flange Ligament Areas	Revision 1
NDE9.25	Manual Ultrasonic Examination of Nozzle Inner Radius from Outer Blend Radius	Revision 1
NDE9.28	Manual Ultrasonic Through Wall Sizing in Pipe Welds	Revision 1
NDE9.31	Magnetic Particle Examination (MT)	Revision 0
NDE9.41	Liquid Penetrant Examination (PT)	Revision 0/ACN 1
NDE10.01	Visual Test-1 Inspections (VT-1)	Revision 0
NDE10.02	Visual Test-2 Inspections (VT-2)	Revision 0-A
NDE10.03	Visual Test-3 Inspections (VT-3)	Revision 0

#### Miscellaneous Documents

Certification documentation for Refuel RF10 nondestructive examination equipment and seven licensee and contractor examination personnel

ASME Section XI Repair/Replacement Package MAI 401358, High Pressure Safety Injection Pump B

ASME Section XI Repair/Replacement Package MAI 406087, High Pressure Safety Injection Pump A

ASME Section XI Repair/Replacement Package MAI 411783, Replace Main Steam Piping on Line 2MS2-123

ASME Section XI Repair/Replacement Package MAI 411831, Weld Repair Chemical and Volume Control System Check Valve CVCMVAAA219

Quality Assurance Audit Report SA-2000-008.1, "Engineering Programs," issued June 22, 2000

Quality Assurance Audit Report SA-99-010.1, "Special Processes Control," issued July 28, 1999

Quality Assurance Surveillance Report QS-2000-W3-092, "VT-2 Examination of Emergency Feedwater System Train A," issued August 8, 2000

Quality Assurance Surveillance Report QS-99-033, "Steam Generator Eddy Current Testing for Refuel Outage 9," issued June 14, 1999

Quality Assurance Surveillance Report QS-99-012, "Welding Services, Inc., Repair of Pressurizer Nozzles," issued April 28, 1999

Condition Reports Numbers CR-WF3-2000-0616, -0475, -0310, -0192, and -0191, and CR-WF3-1999-0921, -0272, -0234, -0232, -0213, -0212, and -0204

Visual Test examination Reports NDEN 2000-135, -136, -137, -199, -226, -227, -231, and -253

Liquid penetrant examination Reports NDEN 2000-142, -158, -163, -164, -165, -166, -176, and -276

Magnetic particle examination sheets and associated examination documents for Reports NDEN 2000-134, and -159

Ultrasonic (UT) calibration data sheets and associated examination records for Reports NDEN 2000-161, -165, -171, -177, -192, -204, -264, -277, and -278



## NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) 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 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:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"><li>•Initiating Events</li><li>•Mitigating Systems</li><li>•Barrier Integrity</li><li>•Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>•Occupational</li><li>•Public</li></ul>	<ul style="list-style-type: none"><li>•Physical Protection</li></ul>

To monitor these seven cornerstones of safety, the NRC used 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>.