



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

February 23, 2000

Charles M. Dugger, Vice President  
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Entergy Operations, Inc.  
17265 River Road  
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**SUBJECT: NRC INSPECTION REPORT NO. 50-382/99-26**

Dear Mr. Dugger:

This refers to the inspection conducted on December 26, 1999, through February 12, 2000, at the Waterford Steam Electric Station, Unit 3, facility. The enclosed report presents the results of this inspection.

During the 7-week period covered by this inspection, your conduct of activities at the Waterford 3 facility was generally characterized by safety-conscious operations, sound engineering and maintenance practices, and careful radiological controls.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

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

Sincerely,

/RA/

P. H. Harrell, Chief  
Project Branch D  
Division of Reactor Projects

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

Enclosure:  
NRC Inspection Report No.  
50-382/99-26

Entergy Operations, Inc.

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 E-Mail report to Document Control Desk (DOCDESK)  
 E-Mail report to Wayne Scott (WES)

E-Mail notification of report issuance to the WAT SRI and Site Secretary (TRF, AHY).

E-Mail notification of issuance of all documents to Nancy Holbrook (NBH).

bcc to DCD (IE01)

bcc distrib. by RIV:

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-382  
License No.: NPF-38  
Report No.: 50-382/99-26  
Licensee: Entergy Operations, Inc.  
Facility: Waterford Steam Electric Station, Unit 3  
Location: Hwy. 18  
Killona, Louisiana  
Dates: December 26, 1999, through February 12, 2000  
Inspectors: T. R. Farnholtz, Senior Resident Inspector  
J. M. Keeton, Resident Inspector  
Approved By: P. H. Harrell, Chief, Project Branch D

ATTACHMENTS: Supplemental Information

## EXECUTIVE SUMMARY

### Waterford Steam Electric Station, Unit 3 NRC Inspection Report 50-382/99-26

This routine, announced inspection included aspects of operations, maintenance, engineering, and plant support activities. The report covers a 7-week period of resident inspection.

#### Operations

- An auxiliary operator manipulated the wrong breaker, resulting in an unplanned entry into a Technical Specification limiting condition for operation. Required self-checking and peer-checking techniques were not used. Appropriate corrective actions were taken by the licensee (Section O4.1).
- Operations personnel inappropriately declared an essential chiller unit operable following maintenance activities. The chiller was declared operable twice, followed by two automatic trips of the unit on high compressor motor temperature. These trips were due to excess oil left in the machine after the completion of the maintenance. Operators did not closely monitor the machine after declaring it operable. Also, the licensee did not effectively track the quantity of oil put into the machine during maintenance (Section O2.1).

#### Maintenance

- The licensee's actions regarding the Reactor Coolant Pump 2B seal water heat exchanger rotating baffle work conducted in August and September 1999 were considered adequate. A detailed review of the postmaintenance documentation revealed no concerns with the work performed. Previously documented actions were considered adequate. Postmaintenance seal and baffle performance since the September 1999 outage was acceptable (Section M2.1).

#### Engineering

- Engineers were responsive to operational needs in completing an operability evaluation in a timely manner. The evaluation was appropriately detailed and supportive of continued operation (Section E2.1).
- The licensee's efforts to successfully troubleshoot and repair Essential Chiller A were well organized. Appropriate personnel were assigned to this task and worked together effectively. The problem was determined to be in a circuit board in the control cabinet (Section E2.2).

#### Plant Support

- A prejob briefing conducted for a containment entry to obtain safety injection tank samples and to take surface temperature measurements on piping leading into the

reactor drain tank was complete, well presented, and effective. A detailed plan was developed to minimized radiological exposure and personnel safety risks. The briefing included all applicable subject matter (Section R4.1).

## Report Details

### Summary of Plant Status

At the beginning of this inspection period, the plant was operating at 100 percent power. On December 29, 1999, a power reduction was commenced. On December 30, power was leveled at 76 percent to accommodate grid requirements during the Y2K transition. On January 1, 2000, reactor power was raised to 100 percent. Reactor power remained at essentially 100 percent power until the end of this inspection period.

## I. Operations

### **O1 Conduct of Operations (71707)**

The inspectors performed frequent reviews and observations on ongoing plant operations, control panel walkdowns, and plant tours. Observed activities were performed in a manner consistent with safe operation of the facility. Operators generally used good communication techniques.

Self-checking and peer-checking techniques were not always used effectively during this inspection period. Details of this are contained in Section O4.1 of this report.

### **O2 Operational Status of Facilities and Equipment**

#### **O2.1 Operational Status of Essential Chiller A**

##### **a. Inspection Scope (71707)**

The inspectors reviewed the licensee's actions regarding the operability status of Essential Chiller A following maintenance to correct a control circuit problem. Information for this review was primarily derived from operator logs.

##### **b. Observations and Findings**

The inspectors noted that the licensee declared Essential Chiller A operable on January 27, 2000, at 11:58 a.m., following the completion of maintenance on this unit to correct a problem in the control circuit. The chiller continued to run until January 28, at 9:23 p.m., when it automatically tripped on high compressor motor temperature. At that time, plant operators declared the chiller inoperable and entered the 72-hour action statement of Technical Specification (TS) 3.7.12. Later that evening, 2 gallons of oil were drained from the unit to restore the proper oil level. The unit was then restarted and subsequently declared operable at 11:55 p.m. on January 28, and the provisions of the TS 3.7.12 action statement were exited.

Approximately 1 hour and 45 minutes later, at 1:40 a.m. on January 29, Essential Chiller A again automatically tripped on high compressor motor temperature. Again the operators declared the machine inoperable and entered the 72-hour action statement of TS 3.7.12. An additional 5 gallons of oil were drained from the chiller to restore the oil level to the top of the bottom sight glass. The chiller was declared operable at 5:28 a.m.

on January 29 and TS 3.7.12 action statement was exited. Following this last oil adjustment, the essential chiller continued to operate as expected for the remainder of this inspection period.

The excess oil in the Essential Chiller A oil sump was due to oil reclamation, which occurred as the machine was operated. Oil was added to the machine during the extended maintenance activities. This oil was then picked up by the refrigerant when the machine was running for short periods during troubleshooting activities and distributed throughout the system. As the machine operated for an extended time period following the completion of the maintenance activities, the oil was reclaimed and returned to the oil sump. When the oil level in the sump reached the lower portion of the compressor transmission, the compressor motor experienced an increase in load. In addition, the oil in the sump was foaming as a result of refrigerant boiling off. This caused a high oil temperature condition in the compressor bearings, which resulted in the automatic chiller trips.

The inspectors made several observations concerning this series of events. The phenomenon of oil reclamation in a chiller unit was well known to the licensee. It is normal for a chiller to function in this way. However, the licensee failed to adequately track and control the total quantity of oil in the machine. If the amount of oil added to the machine during maintenance activities was tracked, operations and maintenance personnel would be aware of the approximate quantity of oil that would be required to be removed from the machine during the next extended run.

In addition, the plant operators did not adequately monitor the essential chiller after it was declared operable on January 27. The operators again did not adequately monitor the chiller after it was declared operable following the second trip on January 29.

The definition of OPERABLE in the TS reads as follows: "A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s)."

Based on this definition, the inspectors considered the declaring of Essential Chiller A operable on January 27 and again on January 29 to have been inappropriate since no special monitoring was conducted on the machine. Since the licensee was aware that oil reclamation would take place during the extended run of the chiller, additional monitoring of the machine during this time should have been performed. To avoid the automatic trips of this safety-related equipment, the operators could have run the machine for an extended period of time and closely monitored its operation, including oil levels, and made adjustments as required. To aid in this effort, the quantity of oil put in the machine during maintenance could have been tracked effectively and an appropriate amount of oil could have been removed during chiller operation. These actions were not done and the chiller experienced two unnecessary trips. Condition Report 2000-0082 was written to place this issue into the corrective action program.

c. Conclusions

Operations personnel inappropriately declared an essential chiller unit operable following maintenance activities. The chiller was declared operable twice followed by two automatic trips of the unit on high compressor motor temperature. These trips were due to excess oil left in the machine after the completion of the maintenance. Operators did not closely monitor the machine after declaring it operable. Also, the licensee did not effectively track the quantity of oil put into the machine during maintenance.

**O4 Operator Knowledge and Performance**

O4.1 Improper Breaker Manipulation Causing Unplanned Entry into Limiting Condition for Operation

a. Inspection Scope (71707)

The inspectors verified appropriate actions were taken by control room operators, reviewed the root cause determination, and verified appropriate corrective actions were taken.

b. Observations and Findings

On January 14, 2000, while hanging a clearance for the containment atmosphere release exhaust fan, the breaker for the controlled ventilation area system (CVAS) exhaust fan was inadvertently opened. This actuated an alarm in the control room and control room operators took appropriate actions to enter TS 3.7.7 limiting condition for operation for CVAS Train B.

The control room operators contacted the auxiliary operator who determined that he had opened the wrong breaker. The breaker for the CVAS exhaust fan was closed. The TS 3.7.7 action statement was exited approximately 4 minutes after being entered.

In followup investigations, the licensee determined that the auxiliary operator had not met expectations nor had he adhered to established procedures. The operator had not used effective self-checking or peer-checking techniques, as required. This resulted in an unplanned entry into a TS condition. No reason was given for his actions. No time pressures or other conditions existed to explain why the operator did not act in an appropriate manner. The inspectors concluded that this event illustrated the importance of careful and deliberate actions of operators in the field.

Condition Report 2000-0027 was written and a root cause investigation was conducted. Appropriate corrective actions were taken. Management expectations were reinforced related to the use of self-checking and peer-checking when performing breaker manipulations.

c. Conclusions

An auxiliary operator manipulated the wrong breaker, resulting in an unplanned entry into a Technical Specification limiting condition for operation. Required self-checking and peer-checking techniques were not used. Appropriate corrective actions were taken by the licensee.

**O8 Miscellaneous Operations Issues (92901)**

O8.1 (Closed) Violation (VIO) 50-382/9808-01: Failure to establish adequate procedures for operation of emergency diesel generator at no or low loads.

The inspectors verified the corrective actions described in the licensee's response letter dated July 1, 1998, to be reasonable and complete. This violation was appropriately addressed.

O8.2 (Closed) Licensee Event Report (LER) 50-382/98-004: TS 4.0.3 Condition/Channel Functional Test

On March 4, 1998, the licensee determined that a surveillance test periodicity for the core protection calculators had not met the intent of TS 4.3.1.1. The root cause was determined to be human error. Corrective actions have been completed to prevent recurrence of this event.

**II. Maintenance**

**M1 Conduct of Maintenance (61726, 62707)**

The inspectors observed all or portions of the following maintenance and surveillance activities as specified by the referenced maintenance action items (MAI) and surveillance procedures:

- 411436 Low-Pressure Safety Injection (LPSI) Pump B upper motor bearing oil replacement
- 401982 Correct small leak on LPSI Pump B upper motor bearing oil level indicator
- 404515 Replacement of LPSI pump suction pressure gauge
- 413420 Troubleshoot and repair essential Chiller A
- OP-903-107 Surveillance Test on Plant Protection System Matrix AD

In general, the work activities were performed in an acceptable and effective manner. The technicians were knowledgeable and conducted the work, as required by applicable

procedures. Appropriate support personnel, including health physics, quality control, supervisory, and system engineering personnel were at the work site or available, if required.

## **M2 Maintenance and Material Condition of Facilities and Equipment**

### **M2.1 Reactor Coolant Pump (RCP) 2B Maintenance Review**

#### **a. Inspection Scope (62707, 92902, 92700)**

The inspectors conducted a detailed review of the LERs, work packages, and other documentation concerning the maintenance performed on RCP 2B during the August and September 1999 forced outages. In addition, the inspectors discussed the completed work with the mechanical maintenance supervisor.

#### **b. Observations and Findings**

The licensee performed extensive maintenance on RCP 2B to correct failed seal water heat exchanger rotating baffles, which caused forced shutdowns on August 1 and September 10, 1999. The inspectors performed a detailed review of the completed MAI packages and LERs 99-011 (for the August 1 shutdown) and 99-014 (for the September 10 shutdown).

As documented in NRC Inspection Reports 50-382/99-16 and /99-20, the seal water heat exchanger baffle on RCP 2B had experienced six failures since 1987. Four of these failures involved the six bolts used to secure the baffle to the RCP shaft shoulder. The two latest failures (in August and September 1999) involved the baffle itself. During the September 1999 forced outage, the licensee determined that the RCP shaft shoulder, to which the baffle was bolted, was inclined across the shaft diameter and contained surface irregularities. Also, the motor-shaft-to-pump-shaft alignment was determined to be outside original equipment manufacturer specifications. Details of these discrepancies and the actions taken by the licensee are provided in NRC Inspection Report 50-382/99-20.

The inspectors have monitored the operation of all four reactor coolant pump seal assemblies since the plant was returned to power operation following the forced outage in September 1999. Identified and unidentified reactor coolant system leak rates have been well within the TS limitations. RCP seal operating parameters remain in the normal range with no indication of abnormal or unexpected operation.

The inspectors reviewed the completed MAI work packages for the September 1999 outage (MAIs 409506 and 409507) to determine if they were complete and provided an accurate record of the work performed on the baffle. Both packages contained specific,

step-by-step instructions to disassemble, inspect, and reassemble the seal and baffle. Each step was initialed and dated such that a reviewer could follow the work as it was completed. The packages appeared complete with all required data and notes. The inspectors considered this documentation to be adequate.

The inspectors discussed the work with the mechanical maintenance supervisor to determine the extent to which the maintenance technicians were briefed prior to each job and if there was sufficient supervision at the job site. No documentation was available to verify the conduct of prejob briefings, but based on these discussions and previous observations of similar work, prejob briefings were conducted and included a description of the work, radiological considerations, and personnel safety aspects of the job. Also, adequate supervision was present at the job site or available to verify the work was completed, as expected, and to assist in any unplanned or unexpected occurrences.

LERs 99-011 and -014 were reviewed and considered complete and adequate. Each included descriptions of the associated event, analysis of the failure mechanism, causal factors, corrective actions, and a discussion of the safety significance of the event. The LER for the second event (99-014) contained more detailed information and analysis when compared to the first event LER (99-011). The failure mechanism was essentially the same in both cases, but additional factors were considered following the second failure. The inspectors considered this to be appropriate.

c, Conclusions

The licensee's actions regarding the RCP 2B seal water heat exchanger rotating baffle work conducted in August and September 1999 were considered adequate. A detailed review of the postmaintenance documentation revealed no concerns with the work performed. Previously documented actions were considered adequate. Postmaintenance seal and baffle performance since the September 1999 outage was acceptable.

**M8 Miscellaneous Maintenance Issues (92902)**

M8.1 (Closed) LER 50-382/99-011: Reactor Shutdown Due to Loss of Controlled Bleed-Off Flow

Details of this event report are contained in Section M2.1 of this report. This LER is closed.

M8.2 (Closed) LER 50-382/99-014: Reactor Shutdown Due to Loss of Controlled Bleed-Off Flow Caused by Rotating Baffle Failure

Details of this event report are contained in Section M2.1 of this report. This LER is closed.

### III. Engineering

#### **E2 Engineering Support of Facilities and Equipment**

##### **E2.1 Engineering Evaluation of Static Uninterruptible Power Supply (SUPS) B**

###### **a. Inspection Scope (37551, 92903)**

The inspectors reviewed the operability determination and followup activities associated with appropriate industry notifications.

###### **b. Observations and Findings**

On January 10, 2000, licensee engineers determined that the new SUPS panel destined to replace SUPS A contained a transistor that was too sensitive for the required application. The engineers contacted the vendor and found that the transistor used by the vendor was from a batch of transistors that did not meet the sensitivity requirements. They found that a transistor from that batch may also have been used in the new SUPS B panel that had been installed in the plant during the last refueling outage. SUPS B had experienced spurious transfers to the alternate power source twice since installation. These transfers did not result in any negative impact on safety equipment.

Operations requested engineering to perform Procedure W4.101, "Initial Engineering Evaluation," to verify operability of SUPS B with the suspect transistor. Based on the assumption that random transfers of SUPS B were the result of lower than normal operating voltages, three cases were assessed to determine safety significance of the random transfers. The analyses concluded that the ability to mitigate consequences of an accident had not been effected in any case. One restriction was placed on aligning High-Pressure Safety Injection Pump AB to replace High-Pressure Safety Injection Pump B because of a postulated delay in relay actuation given an untimely transfer of SUPS B. The inspectors found the engineering evaluation to be reasonable based on the assumptions.

###### **c. Conclusions**

Engineers were responsive to operational needs in completing an operability evaluation in a timely manner. The evaluation was appropriately detailed and supportive of continued operation.

## E2.2 Essential Chiller A Troubleshooting

### a. Inspection Scope (37551)

The inspectors observed the licensee's efforts to troubleshoot and repair Essential Chiller A to correct a problem in the control circuit of this machine. The licensee formed a team of individuals from different disciplines to determine the cause and recommend corrective actions.

### b. Observations and Findings

On January 21, 2000, the licensee declared Essential Chiller A inoperable when it failed to start following a "silent trip." This was a chiller trip with no associated alarms or other indications in the control room to alert the operators that the chiller had tripped. No obvious cause for failure to announce the trip was immediately identified. The licensee conducted initial troubleshooting activities under MAI 413420. These efforts proved unsuccessful and the licensee formed an investigation team on January 24. The team consisted of operations, maintenance, administrative, and engineering personnel.

The purpose of the team was to gather all available data and to formulate a focused and systematic troubleshooting plan to determine the cause and recommend appropriate corrective actions. The inspectors observed portions of the team's activities to determine the effectiveness of this approach.

The team gathered all information that had been collected up to that point and established a detailed time line to help organize the effort. All applicable drawings of the chiller control circuitry were obtained. The team generated a series of troubleshooting flow charts, which were supplied to the maintenance personnel in the field. Performance of each step in the flow charts led to decision points. Completion of each flow chart activity provided additional information for the team to use to isolate the problem.

The problem was identified as defective solder joints on a control circuit board. These joints were repaired and the unit was returned to service. The total time for this effort was approximately 6 days.

The inspectors considered this effort to have been well organized and facilitated. Appropriate personnel were assigned to this task and worked together effectively. The effort resulted in successful troubleshooting and repair of the essential chiller. In addition, a better understanding of the chiller control circuit was obtained through this effort. This information will be used in future chiller troubleshooting efforts.

### c. Conclusions

The licensee's efforts to successfully troubleshoot and repair Essential Chiller A were well organized. Appropriate personnel were assigned to this task and worked together effectively. The problem was determined to be in a circuit board in the control cabinet.

## **E8 Miscellaneous Engineering Issues (92903)**

- E8.1 (Closed) VIO 50-382/9808-03: Failure to establish adequate measures to maintain regulatory requirements and design basis.

The inspectors verified the corrective actions described in the licensee's response letter dated July 1, 1998, to be reasonable and complete. This violation was appropriately addressed.

- E8.2 (Closed) VIO 50-382/9808-04: Failure to perform appropriate surveillances due to inadequate procedures.

The inspectors verified the corrective actions described in the licensee's response letter dated July 1, 1998, to be reasonable and complete. This violation was appropriately addressed.

- E8.3 (Closed) LERs 50-382/98-008-00 and -01: Potential Concurrent Degraded Essential Chill Water Systems Train A/B

On April 14, 1998, the licensee discovered a degraded condition in both trains of the essential chilled water system. For a 54-day period in 1998, Essential Chillers A and B operated with degraded control circuits that prevented either chiller from operating at full capacity. NRC Inspection Report 50-382/99-13 described the details and Noncited Violation 50-382/9913-01 was issued.

LER 50-382/98-008, Revision 1, was issued in August 1998. The revised LER provided an engineering evaluation of the safety significance of operating with degraded systems. The evaluation concluded that the safety equipment located in the affected rooms was capable of functioning at the postulated elevated room temperatures caused by the degraded chillers.

## **IV. Plant Support**

### **R1 Radiological Protection and Chemistry Controls**

During routine tours, the inspectors observed posted radiation surveys, which were required by licensee procedures and NRC regulations. A sample of doors was found to be locked as required for the purpose of radiation protection. Licensee personnel working in radiologically controlled areas were observed following applicable procedures for radiation protection.

#### **R4 Staff Knowledge and Performance in Radiological Protection and Chemistry**

##### **R4.1 Prejob Briefing for Containment Entry**

###### **a. Inspection Scope (71750)**

The inspectors observed a prejob briefing that was conducted prior to personnel entering the containment building to perform two tasks.

###### **b. Observations and Findings**

On February 8, 2000, health physics personnel conducted a prejob briefing with chemistry and maintenance personnel prior to entering the containment building. Chemistry personnel needed to obtain safety injection tank samples and maintenance personnel were assigned to take surface temperature measurements on various piping leading into the reactor drain tank. Both of these tasks required entry into the containment building at power. Health physics personnel accompanied the chemistry and maintenance personnel while in the building.

The inspectors observed the prejob briefing and considered it to be complete, well presented, and effective. A detailed plan had been developed for this entry, which included performing these two tasks in series with one health physics escort. The safety injection tank samples were obtained first and chemistry personnel exited the building. This was followed by the maintenance personnel entering the building, taking the required data, and exiting. The briefing included expected radiological conditions, intended routes to be taken in the building, electronic dosimeter alarm setpoints, and personnel safety issues. Heat stress was a concern, which required the use of cool vests.

###### **c. Conclusions**

A prejob briefing conducted for a containment entry to obtain safety injection tank samples and to take surface temperature measurements on piping leading into the reactor drain tank was complete, well presented, and effective. A detailed plan was developed to minimize radiological exposure and personnel safety risks. The briefing included all applicable subject matter.

#### **F3 Fire Protection Procedures and Documentation**

Because of the increase in numbers of continuous fire watches required by the licensee, the inspectors reviewed the fire watch training program and verified the qualifications of employees engaged as fire watches. The training program appeared to be appropriate and the continuous fire watches reviewed had current qualifications.

## **V. Management Meetings**

### **X1 Exit Meeting Summary**

The inspectors presented the inspection results to members of licensee management on February 16, 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

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

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C. M. Dugger, Vice-President, Operations  
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B. Thigpen, Manager, Planning and Scheduling  
A. J. Wrape, Director, Engineering

INSPECTION PROCEDURES USED

37551	Onsite Engineering
61726	Surveillance Observations
62707	Maintenance Observations
71707	Plant Operations
71750	Plant Support Activities
92700	Onsite LER Review
92901	Followup-Plant Operations
92902	Followup-Maintenance
92903	Followup-Engineering
92904	Followup-Plant Support

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

50-382/9808-1	VIO	Failure to establish adequate procedures for operation of emergency diesel generator at no or low loads (Section O8.1).
50-382/98-004	LER	Technical Specification 4.0.3 Condition/Channel Functional Test (Section O8.2).
50-382/99-011	LER	Reactor Shutdown Due to Loss of Controlled Bleed-Off Flow (Section M8.1).
59-382/99-014	LER	Reactor Shutdown Due to Loss of Controlled Bleed-Off Flow Caused by Rotating Baffle Failure (Section M8.2).
50-382/9808-03	VIO	Failure to establish adequate measures to maintain regulatory requirements and design basis (Section E8.1).
50-382/9808-04	VIO	Failure to perform appropriate surveillances due to inadequate procedures (Section E8.2).
50-382/98-008-00 and -01	LER	Potential Concurrent Degraded Essential Chilled Water Systems Train A/B (Section E8.3).

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CVAS	controlled ventilation area system
LER	licensee event report
LPSI	low-pressure safety injection
MAI	maintenance action item
NRC	Nuclear Regulatory Commission
PDR	Public Document Room
RCP	reactor coolant pump
SUPS	static uninterruptible power supply
TS	Technical Specification
VIO	violation