ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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Report No.:	50-382/96-13
Licensee:	Entergy Operations, Inc.
Facility:	Waterford Steam Electric Station, Unit 3
Location:	Hwy. 18 Killona, Louisiana
Dates:	October 13 through November 30, 1996
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ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Waterford Steam Electric Station, Unit 3
NRC Inspection Report 50-382/96-13

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

Operations

- The licensee identified three examples of failure to maintain configuration control. These failures were identified as examples of a violation of Technical Specification (TS) 6.8.1.a. For all three examples, there were control room panel indications of the abnormal configuration which were readily available to the control room operators. This is of particular concern since several shift turnovers occurred before the abnormal operating configurations were identified. The direct safety significance of each of these incidents was minor; however, poor configuration control discipline and poor control room panel walkdowns represent generic concerns for the conduct of operations (Section O2.1).

- The inspectors identified one poor operations work practice involving the determination of the gagged-closed position of Containment Fan Cooler Isolation Valves CC-807A and CC-823A. This revealed an operator knowledge deficiency and willingness to proceed in the face of uncertainty (Section O4.1).

- Operations' peer check process for reactivity manipulations and the control board operator's verification of control switches prior to operation were good during a boration activity (Section O4.2).

- The operators' failure to recognize the effect of the curtains on the operability of the WCT fans represented an operator knowledge deficiency and was contributed to by a lack of thorough engineering evaluation. The failure to enter the TS limiting conditions for operation for the inoperable wet cooling tower (WCT) fans is a violation of TS 3.7.4.f (Section O8.1).

Maintenance

- The inspectors identified a violation for the failure to perform inservice testing which verified the operational readiness of the dry cooling tower manual inlet and outlet isolation valves. The inspectors determined that the review of IST requirements for the CCW system did not identify all of the requirements for testing due to the poor documentation of the design-basis tornado event (Section M1.2).

Engineering

- Engineering's review of inservice testing requirements for the component cooling water system did not identify all of the components requiring testing due to the poor documentation of operator actions required for the design basis tornado event (Section M1.2).

- The inspectors determined that the licensee was slow in evaluating safety-related pump potential operability concerns; however, the completed evaluations were found to be thorough and assumptions appropriate (Section M1.3).

- Engineering's identification that the broad range gas monitors did not have independent power supplies is considered a noncited violation (Section E2.1).

Plant Support

- The inspectors identified an area for improvement involving the failure to source check survey meters upon activation of the Technical Support Center (TSC) during the October 23, 1996, emergency drill. Emergency preparedness personnel adequately maintained the operational readiness of the TSC (Section P1.1).

- The inspectors noted good command and control in the control room simulator during the emergency preparedness drill of October 23, 1996. The crew diagnosed plant conditions properly and responded in a timely manner (Section P4.1).

- The TSC did not consistently communicate actions to the control room, and Procedure OP-921-521, "Severe Weather and Flooding," did not provide guidance on structures, systems, and components that needed to be inspected on a priority basis following the dispatch of personnel to assess damage (Section P4.1).

Report Details

Summary of Plant Status

The plant operated at 60 percent power between November 21-24 to perform maintenance on the Main Feedwater Pump B inboard journal bearing. The plant operated at essentially 100 percent power during the remainder of the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors performed frequent reviews of ongoing plant operations, control room board walkdowns, and plant tours. Observed activities were generally performed in a manner consistent with safe operation of the facility. Operators were familiar with causes for control room annunciators. Caution and danger tags accurately identified out-of-service equipment. However, certain activities appeared to be in violation of NRC requirements or indicate problem areas, as discussed below.

O2 Operational Status of Facilities and Equipment

O2.1 Failure to Maintain Configuration Control

a. Inspection Scope (71707)

The inspectors reviewed the licensee response to identifying that the containment airborne radioactivity removal unit had been left running for 19 days, dry cooling tower (DCT) Fan 13-B had been left in the off position for 36 hours, and Valve SI-139B was mispositioned for 62 hours.

b.1 Containment Airborne Radioactivity Removal Unit Left Running for 19 Days

On October 1, 1996, the reactor building airborne radioactivity removal system was started in preparation of a containment purge and entry. The airborne radioactivity removal system is a nonsafety system inside containment that is used to reduce airborne radioactivity below the limits of 10 CFR Part 20 to permit access for operation, maintenance, inspection, and testing inside containment. After exiting containment and completing the containment purge, operations failed to secure the airborne radioactivity removal system. Consequently, the system remained in operation until the abnormal operating configuration was detected on October 20, a period of 19 days.

Procedure OP-002-010, "Reactor Auxiliary Building HVAC and Containment Purge," Revision 11, Section 6.6, required that the system be secured when stopping

containment purge. The inspectors determined that the failure to maintain configuration control for the airborne radioactivity removal system is the first example of a violation of TS 6.8.1.a (50-382/9613-01).

b.2 DCT FAN 13-B in Off Position for 36 Hours

On October 19, 1996, the licensee placed selected DCT fans in the manual-fast position to maintain wet cooling tower (WCT) basin temperatures above 70°F. While returning the fans to the automatic mode, a licensed operator inadvertently placed the control switch for DCT Fan 13-B in the off position at 3:37 a.m. on October 19. DCT Fan 13-B remained in the off position until an operator detected the abnormal switch configuration at 4:40 p.m. on October 20, a period of 36 hours. The inspectors noted that operations failed to observe the abnormal switch configuration during three shift turnovers.

Procedure OP-002-003, "System Operating Procedure - Component Cooling Water System," Revision 10, Section 6.0, "Normal Operations," required the DCT fan control switches be in the AUTO position. The inspectors determined that the failure to maintain configuration control for DCT Fan 13-B is a second example of a violation of TS 6.8.1.a (50-382/9613-01).

b.3 Valve SI-139B Left Open for 62 Hours

On November 21 at 4 p.m., control room operators identified that Low-Pressure Safety Injection to Reactor Coolant Loop 1A Flow Control Valve SI-139B was in the open position instead of the required closed position. Based on a review of plant monitoring computer records and station logs, the operators determined that the valve was last opened during surveillance testing on November 19 at 1:42 a.m., a period of 62 hours. The inspectors noted that the abnormal configuration occurred despite immediate corrective actions being implemented to remedy inadequate walkdowns of control room panels.

Procedure OP-903-121, "Safety Systems Quarterly IST Valves Tests," Section 7.2, "Safety Injection Train B," required that Valve SI-139B be closed and independently verified closed. The inspectors determined that the failure to close Valve SI-139B following completion of inservice testing (IST) is a third example of a violation of TS 6.8.1.a (50-382/9613-01).

c. General Observations

At of the end of the inspection period, the licensee was still investigating the cause of the three examples of configuration control problems and inadequate control room panel walkdowns. The inspectors noted that for all three incidents there were control room panel indications of the abnormal configuration which were readily available to the control room operators. In response to the deficiencies, operations

initiated corrective actions which included, in part, counseling of the affected individuals, performance of at least two control panel walkdowns per shift, and a review of the operations turnover process.

d. Conclusions

The inspectors concluded that inconsistent use of Stop-Think-Act-Review techniques, inattention to detail, and lack of procedure discipline contributed to these incidents. The inspectors concluded that the direct safety significance of each of these incidents was minor; however, poor configuration control discipline and poor control room panel walkdowns represent generic concerns for the conduct of operations.

O2.2 Failure to Implement Technical Specification (TS) for Containment Isolation Valves

a. Inspection Scope (71707)

The inspectors reviewed licensee actions in response to Condition Report (CR) 96-1726, which documented the failure to totally isolate Containment Penetration 20 as required by TS 3.6.3 from October 23-25.

b. Observations and Findings

After NRC questioned operability of containment isolation valves in the component cooling water (CCW) system supply and return to the containment fan coolers (refer to NRC Inspection Report 50-382/96-24), the licensee initiated testing to ensure that the air-operated valve accumulators would maintain the containment isolation valves closed on a loss of instrument air. On November 1, testing personnel identified internal leakage in the air-operator for Valve CC-807A, a containment fan cooler CCW inlet isolation valve.

During development of work procedures for Valve CC-807A, operators could not isolate the containment penetration since only a check valve existed between the penetration and the temporary chiller system. After learning this information, the inspectors questioned operators as to why containment penetration isolation was not a problem during a similar maintenance activity performed from October 23-25 for Valve CC-808A, a containment fan cooler CCW inlet isolation valve, which isolated Containment Penetration 20. Subsequently, the licensee initiated CR 96-1726 to review and evaluate the circumstances related to isolating the containment penetration. The licensee determined operators had not isolated all flow paths by use of a deactivated automatic valve, a manual valve, or a blind flange as specified in the actions for TS 3.6.3. Instead, operators had used a check valve as a containment isolation valve barrier for the penetration.

Region IV Task Interface Agreement 96TIA017, dated November 13, 1996, requested that the Office of Nuclear Reactor Regulation review the regulatory

requirements for isolation and closure capability for the containment fan cooler CCW isolation valves. The inspectors determined that the answer to Task Interface Agreement 96TIA017 will have a direct bearing on the safety significance of the failure to properly isolate Containment Penetration 20 during maintenance activities. The failure to maintain appropriate isolation valves for Containment Penetration 20 is an unresolved item pending resolution of Task Interface Agreement 96TIA017 (50-382/9613-02).

c. Conclusions

The inspectors identified an unresolved item for failure to properly isolate a containment penetration. This condition reflected mixed operator performance in that one crew recognized that a penetration was unisolable; however, a previous crew failed to recognize the same situation.

O3 Operations Procedures and Documentation

O3.1 Emergency Operating Procedures (EOP) Upgrade (71707)

The inspectors noted that the licensee is upgrading their EOPs to take fewer deviations from the owner's group and to be in a two column format. These new EOPs were being verified and validated by crews in the simulator. The inspectors considered this to be a positive initiative to improve the EOPs.

O4 Operator Knowledge and Performance

O4.1 Installation of Gagging Device on Valves CC-807A and CC-823A

a. Inspection Scope (71707)

The inspectors observed operations personnel verify the placement of danger tags on the temporary gagging device for Containment Fan Cooler Isolation Valves CC-807A and CC-823A.

b. Observations and Findings

During the observation of maintenance activities associated with the removal of the air actuator for Valves CC-807A and CC-823A, mechanical maintenance decoupled the valve stem and installed a temporary gagging device. Prior to the removal of the actuator, an operator placed danger tags on the gagging device.

The inspectors observed the independent verifier, for the danger tag, check that the gagging device was installed on Valve CC-807A. Prior to the independent verifier signing the tag sheet, the inspectors questioned the operator to determine how he verified the gagged-closed position. The verifier rechecked the gagging device but could not determine if the valve was in the closed position. The verifier stated that

the valve actuator position indicating limit switches would provide an indication of the open or closed position of the valve. The verifier observed the limit switches on the actuator and determined that the valve was in the open position. The inspectors noted that the verifier was not aware that the valve actuator had been placed to the full open position after decoupling the stem in order to install the gagging device.

Because the verifier could not determine if the valve was gagged closed, he questioned the individual hanging the danger tag to determine how the gagged-closed position could be verified. The individual could not demonstrate that the valve was gagged closed.

The two operators questioned mechanical maintenance personnel to determine what indications were available to verify that the valve was gagged closed. Mechanical maintenance informed the operators that a separate valve position indicator existed between the valve stem and the packing gland. After verifying the alternate valve position indicator, the operators were able to demonstrate that the valves were gagged closed.

The inspectors noted that the operators' determination of the gagged-closed position was poor in that when questioned by the inspectors they were unable to demonstrate the position of the valves.

c. Conclusions

One poor operations work practice involving the inadequate determination of the gagged-closed position of Valves CC-807A and CC-823A was identified. This revealed an operator knowledge deficiency and a willingness to proceed in the face of uncertainty.

O4.2 Control Room Peer Checks During Reactivity Manipulations

a. Inspection Scope (71707)

The inspectors performed observations of personnel during reactivity manipulations.

b. Observations and Findings

On November 21, the inspectors observed two operating shifts add approximately 40 gallons of boric acid to the reactor coolant system. The inspectors noted that both operating shifts used a peer check process to aid in preventing an abnormal reactivity manipulation. The addition of the boric acid required the control board operator to manipulate the control switches with the procedure in hand. The peer check operator observed the control board operator perform the evolution.

The inspectors observed the control board operator point to each control switch to verify the correct valve was being operated. Additionally, the inspectors observed that the peer check operator did not reference the procedure during the evolution and that the control board operator did not state the actions he was performing during the evolution. The inspectors determined that the peer check process has a potential weakness in that the peer check operator did not reference the procedure to verify correct control board manipulations. The operations manager stated that he would evaluate the inspectors' observations and make changes if necessary.

c. Conclusions

The inspectors determined that the peer check process for reactivity manipulations and the control board operator's verification of control switches prior to operation were good during a boration activity. It was noted, however, that the potential for ineffective peer check existed because the peer check operator had not referenced the procedure during the evolution.

O8 Miscellaneous Operations Issues (92901)

O8.1 (Closed) Unresolved Item 50-382/9605-03: Failure to enter TS limiting conditions for operation (LCOs).

This item initiated the corrective actions implemented in response to the root cause analysis documented in CR 96-0497. The licensee performed the root cause analysis to determine why operators failed to understand conditions requiring entry into TS LCOs. The inspectors reviewed the root cause analysis and completed corrective actions identified in the root cause analysis. The inspectors determined that the short-term and intermediate-term corrective actions implemented in response to the root cause analysis have not been fully effective; however, improvement was noted. The corrective actions included procedure guidance that required operators to enter TS LCOs under any condition of uncertainty. On November 7, 1996, in response to a number of recent errors related to improper entry into TS LCOs, the Operations Manager issued a memorandum to all operations personnel that reiterated his expectations for entry into TS LCOs.

Many of the long-term corrective actions related to process improvements to aide control room operators will not be completed until the second quarter of 1997. The inspectors will evaluate the completed long-term corrective actions during the closeout of Licensee Event Report 50-382/96-005.

The other aspect of this unresolved item related to the specific failure to perform the actions required by TS 3.7.4.f. As documented in NRC Inspection Report 50-382/96-05, Section 3.1, operators failed to recognize that placing curtains around the WCT basin on three separate occasions from May 5-9, 1996, rendered the affected cell inoperable. TS 3.7.4.f requires, in part, that, with more than one fan inoperable and the outside air temperature greater than 70°F, the dry

bulb temperature must be determined at least once every 2 hours. On May 5-9, 1996, various WCT fans were inoperable, because curtains were placed over the WCT air flow path, while outside air temperature exceeded 70°F; however, operators did not measure the dry bulb temperature every 2 hours. The failure to determine the dry bulb temperature with a WCT fan inoperable is a violation of TS 3.7.4.f (50-382/9613-03). The operators' failure to recognize the effect of the curtains on the operability on the WCT fans represented an operator knowledge deficiency and was contributed to by the lack of a thorough engineering evaluation.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707,61726)

The inspectors observed all or portions of the following maintenance and surveillance activities:

• WA 01151881	Adjust Regulator for Valve CC-807A
• WA 01152104	Replace Solenoid Valve for Valve CC-807A
• WA 01152141	Rework Valve CC-823A Actuator
• WA 01152142	Rework Valve CC-807A Actuator
• WA-01151879	Leak Test of Valve CC-181A
• STA-001-005	Leak Testing of Air and Nitrogen Accumulators for Safety-Related Valves

b. Observations and Findings

The inspectors found that maintenance and surveillance activities listed above were conducted in accordance with the applicable procedures. TS LCOs were met and the systems were restored properly. Measuring and test equipment was verified to have been in current calibration. The inspectors reviewed the completed test documentation and noted that acceptance criteria were met.

c. Conclusions

Maintenance and surveillance activities observed were performed properly and in accordance with the applicable procedures.

M1.2 IST of DCT Manual Isolation Valves

a. Inspection Scope (62707)

The inspectors performed a review of manually operated DCT bundle isolation valves to determine if IST requirements were being implemented.

b. Observations and Findings

Updated Final Safety Analysis Report (UFSAR) Section 9.2.5.3.3, "Site Related Phenomena," states that damage by tornado missiles to the DCT coils is detected by decreasing CCW surge tank level and automatic bypassing of the DCTs. The licensee must maintain the DCTs bypassed for approximately 2 hours to enable sufficient time to isolate the damaged DCT bundles and place the operable bundles back into service.

Restoration of the DCT requires that unprotected DCT bundles damaged in the design-basis tornado event be isolated by closing the inlet and outlet manual isolation valves. Closure of the DCT isolation valves following the tornado accident represents an active safety function.

10 CFR 50.55a(g) requires that IST to verify operational readiness of pumps and valves whose function is required for safety be accomplished in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Subsection IWV-3400, "Inservice Tests, Category A and B Valves," requires that valves be exercised to the position required to fulfill their function. The inspectors reviewed the IST program and noted that the DCT bundle inlet and outlet isolation valves were not included in the IST program and were not periodically exercised. The failure to exercise the DCT bundle manual isolation valves is a violation of 10 CFR 50.55a(g) (50-382/9613-04).

The failure of the licensee to identify the need for IST of the DCT isolation valves is of particular concern because personnel failed to identify the active safety function during a 100 percent review of IST requirements associated with the CCW system in August 1996. Engineering personnel stated that the DCT bundle isolation valves were not identified during the review because of the poorly documented design basis for the tornado event.

c. Conclusions

The inspectors identified a violation for the failure to perform IST which verified the operational readiness of the DCT manual inlet and outlet isolation valves. The inspectors determined that the review of IST requirements for the CCW system did not identify all of the requirements for testing due to the poor documentation of the design-basis tornado event.

M1.3 Review IST of Pumps

a. Inspection Scope (73756)

The inspectors evaluated, in part, the basis for the selection of the IST "alert" and "action" limits for several safety-related pumps. The inspectors compared the IST flow and differential pressure limits to the design basis limits. Further, the inspectors verified, in part, the ability of the safety-related pumps to meet design basis flows.

b. Observations and Findings

In March 1996, the licensee initiated CR 96-0414 that documented that the IST acceptance criteria for the CCW pumps had allowed pump operation to be less than the 6554 gpm flow specified in UFSAR Table 9.2-3, "Heat Removal and Water Requirements for the CCWS." Immediate actions included documenting that a previous operability analysis demonstrated that a CCW system flow of 6000 gpm provided the required design basis flow and heat removal requirements.

The licensee initiated a root cause analysis for the deficiency identified in CR 96-0414. The root cause evaluation identified several contributing causes. The major cause involved inadequate margins for the CCW system as originally designed. Another significant contributor was the failure to take advantage of prior opportunities upon receipt of industry information. Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," indicated that testing ". . . assessed whether adequate margins are maintained" and specified that, together with the TS, IST programs are intended to ensure the operational readiness of safety-related pumps and valves.

As indicated in CR 96-0414, the licensee first knew about this issue in 1994 when Arkansas Nuclear One described that the high pressure injection pumps could be considered operable in the "alert" range and have flow and differential pressure conditions lower than allowed in the design basis. This item was assigned a low priority because engineering personnel wrongly assumed that all safety-related pumps had sufficient design margin.

The interim corrective actions required determining the minimum design pump head required at the tested flow rate for all pumps in the IST program and reviewing the baseline IST data against the design minimum data. A long-term corrective action required updating the UFSAR and the IST program to list the CCW system design flow at 6000 gpm. Actions to prevent recurrence included: periodically testing the CCW system in the accident lineup; continuing actions to improve the questioning attitude and self-critical nature of site personnel; evaluating the need to revise the review process for industry information; reviewing outstanding action items for operability concerns; and evaluating site compliance with the UFSAR.

The engineers determined the minimum acceptable pressures at design basis flow requirements and translated this information to the required differential pressure at the IST flow values. Design engineering completed the evaluation (Engineering Report on Minimum Acceptable Pump Differential Pressure at The Inservice Test Flow Rate) in June 1996 and issued the report in October 1996.

In October 1996, the Inservice Test Group adjusted the reference values and the low "action" and low "alert" limits for Trains A and B auxiliary CCW and Trains A and A(B) high pressure safety injection to ensure that the pumps would be declared inoperable at a point before or when the IST values indicated that the pumps could not meet the minimum design basis values. Prior to adjusting the low "alert" and low "action" limits, the pumps could have been considered operable in accordance with the IST program yet unable to meet design basis flow requirements. The inspectors reviewed historical IST data for the affected pumps and determined that the pumps had remained operable.

c. Conclusions

The inspectors determined that the licensee was slow to evaluate whether the high pressure injection pumps were subject to the same operability concerns as at another facility. The delay in performing the evaluation was particularly poor since there was regulatory guidance available related to the issue. Once the licensee had addressed the issue, licensee evaluations were found to be thorough and assumptions appropriate. The licensee implemented appropriate actions to ensure that Trains A and B auxiliary CCW and Trains A and A/B high pressure safety injection would be declared inoperable during IST prior to exceeding the design basis values.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 (Open) Inspection Followup Item 50-382/94402-02: Unacceptable weld-joint configuration identified during inspection of flow accelerated corrosion replacement piping. When Field Weld FW-20A was installed between the high-pressure turbine and the first-stage feedwater heaters, the drawing detail for the weld was not followed. This resulted in a condition that conflicted with the drawing.

The inspectors reviewed CR 94-337 and noted that the licensee had identified the following actions to prevent recurrence: (1) training of craft to stress the importance of installing the half-coupling correctly, and (2) revising applicable procedures to require verification that the inside diameter of the half coupling and sockolet matched the hole cut in the pipe. The inspectors noted CR 94-337 was closed May 19, 1994.

While reviewing the corrective actions, the inspectors noted the following: (1) there was no documentation that the training recommended by CR 94-337 had been performed, and (2) procedures had not been revised to require weld-joint verification

by quality control personnel. The inspectors noted that the applicable section (Document E-GWS-1, Revision 1) of the current Welding Program Manual did not require quality control verification of half-coupling sockolet welds.

When the licensee was notified that CR 94-337 actions to prevent recurrence had not all been administratively completed or could not be verified as completed, they issued CR 96-1452 to implement corrective actions to resolve the inspectors' concerns. This item remains open pending review of the corrective actions implemented for CR 96-1452.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Broad Range Gas Monitor (BRGM) Power Supply

a. Inspection Scope (37551)

The inspectors reviewed the corrective actions associated with identifying that BRGMs A and B were both powered from Distribution Panel 396AB.

b. Observations and Findings

On October 23, 1996, engineering initiated CR 96-1656 to document that BRGMs A and B shared the same power supply. UFSAR Section 6.4.4.2.b specified that redundant BRGMs were powered from independent nonsafety-related uninterruptible power supplies.

TS 3.3.3.7.3 states that two independent broad range gas detection systems shall be operable. With one broad range gas detection system inoperable, restore the inoperable detection system to operable status within 7 days or within the next 6 hours initiate and maintain operation of the control room ventilation system in the isolate mode of operation. In response to CR 96-1656, the shift supervisor declared BRGM B inoperable due to not having an independent power supply and implemented the required TS action statement.

On October 30, the licensee placed the control room ventilation system in the isolate mode of operation, minimized the number of personnel in the control room envelope to less than 16, and implemented provisions to ensure TSC personnel responded to the emergency operations facility in the event of emergency plan activation.

On November 13, the licensee completed plant modifications to provide independent uninterruptible power supplies to the BRGMs. This licensee-identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. Specifically, the violation was

identified by the licensee and was not willful. Actions taken as a result of a previous violation should not have corrected this problem, and appropriate corrective actions were completed by the licensee (50-382/9613-05).

c. Conclusions

The inspectors identified a noncited violation involving engineering's identification that BRGMs A and B did not have independent power supplies.

E2.2 Review of Facility and Equipment Conformance to UFSAR Description

A recent discovery of a licensee operating a facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR descriptions. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The following inconsistencies were noted between the wording of the UFSAR and the plant practices, procedures, and/or procedures observed by the inspectors.

UFSAR Section 6.4.4.2.b specified that redundant BRGMs were powered from independent, nonsafety-related, uninterruptible power supplies. However, the BRGMs were powered from the same distribution panel (See Section E2.1).

UFSAR Section 12.3A specified that the original shielding study dose rates were obtained though the use of Computer Code SPAN-4. During a review of Calculation OSA-RC-CALC-91001, "Dose Rates at the CS-117A and CS-117B Valve Operators Six Hours into a Small Break Loss of Coolant Accident," the inspectors noted that MICROSHIELD, a computer code not specified in the UFSAR was used to perform the shielding study dose calculations.

UFSAR Section 3.9 specified that ICES STRUDL was used to perform safety-related structural analysis and design calculations. In response to the inspectors' concern regarding the use of MICROSHIELD, the licensee determined that the GTSTRUDL computer code had been used instead of the UFSAR described ICES STRUDL computer code. The licensee stated that a review of the MICROSHIELD and GTSTRUDL computer codes would be performed and the necessary UFSAR changes would be submitted to the NRC.

E8 Miscellaneous Engineering Issues (92903)

E8.1 (Closed) Inspection Followup Item 50-382/9306-10: This item involved licensee efforts to complete reviews of its Generic Letter 89-10 motor-operated valve population for susceptibility to pressure locking and thermal binding and to take corrective actions to ensure valve operability. Subsequently, the NRC issued Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." The response to this generic letter is currently under

review by the NRC Office of Nuclear Reactor Regulation. This issue will be fully resolved under Generic Letter 95-07; therefore, this item has been closed.

IV. Plant Support

P1 Conduct of EP Activities

P1.1 Failure to Source Check Technical Support Center (TSC) Survey Meters

a. Inspection Scope 71750

The inspectors toured the TSC on November 3, 1996, to determine if the facility was readily available and maintained for emergency operations.

b. Observations and Findings

The inspectors noted that the licensee maintained the operational readiness of the TSC. During the tour, the inspectors noted that Ludlum 12 Survey Meters HP-CR-091 and HP-CR-025 were last source-checked on September 4, 1996, and June 28, 1996, respectively. The inspectors noted that these survey meters were in use during the site emergency drill on October 23, 1996, and that they should have been source checked as part of the initial activation of the TSC.

Procedure EP-002-100, "Technical Support Center Activation, Operation and Deactivation," did not provide guidance on source checking the facility survey meters. The inspectors determined that the failure to ensure that survey meters are source-checked during activation of the TSC during the October 23 site drill is an area for improvement.

The corrective actions included planned revisions to the activation procedures to include additional requirements for source checking survey meters and adding survey meter source checking to the lessons learned section of emergency preparedness training program. The inspectors determined that the planned corrective actions for the failure to ensure survey meters were source-checked should be sufficient to prevent recurrence.

c. Conclusions

The inspectors identified an area for improvement involving the failure to source-check survey meters during activation of the TSC during the October 23, 1996, emergency drill.

P4 Staff Knowledge and Performance in EP

P4.1 October 23, 1996, EP Drill

a. Inspection Scope (71750)

The inspectors observed and evaluated the control room simulator staff during the EP drill conducted on October 23, 1996. The tasks evaluated included detection and classification of events, analysis of conditions, and notification of onsite personnel and offsite authorities.

b. Observations and Findings

The inspectors noted good formality and command and control in the control room simulator. The operators consistently employed three-way communications and repeat-backs in accordance with operations instructions. In addition, the control room supervisor conducted frequent crew briefings throughout the drill. The crew used good teamwork in diagnosing plant conditions and planning for recovery actions. Notifications to offsite agencies were appropriate.

The inspectors also noted that, although the control room simulator crew communicated frequently to the TSC, the prioritization and strategies of the TSC were not consistently communicated back to the control room simulator crew. On two occasions in which safety-related pumps had failed, the control room simulator crew was unaware that the TSC had directed personnel in the operations support center to investigate. This resulted in the shift supervisor directing auxiliary operators to locally investigate the pump failures.

The drill scenario also included a tornado strike. The control room simulator crew responded appropriately. However, the inspectors noted that the abnormal operating procedure for tornado response did not have sufficient detail for timely response. Procedure OP-921-521, "Severe Weather and Flooding," Revision 2, Section E2.12, which discussed tornado strike response, stated "when weather conditions are safe dispatch personnel to assess damage." Procedure OP-921-521 did not provide direction on what to inspect or the priority in which to inspect systems, despite several safety systems (e.g., DCTs, emergency feedwater) having portions exposed to the outside. The inspectors discussed these observations with the operations manager who stated that these concerns would be evaluated for corrective actions.

c. Conclusions

The inspectors noted good command and control in the control room simulator during the EP drill of October 23, 1996. The crew diagnosed plant conditions properly and responded in a timely manner. The TSC did not communicate their

actions to the control room on two occasions. The procedure for response to a tornado strike required improvement in that it did not provide direction of what inspections were necessary on a priority basis.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 3, 1996. 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

Licensee

R. G. Azzarello, Manager, Maintenance
T. P. Brennan, Design Engineering
C. M. Dugger, General Manager, Plant Operations
J. J. Fisicaro, Director, Nuclear Safety
T. J. Gaudet, Acting Manager, Licensing
P. M. Melancon, Inservice Testing Engineer
D. C. Matheny, Manager, Operations
M. B. Sellman, Vice-President, Operations
D. W. Vinci, Superintendent, System Engineering
A. J. Wrape, Director, Design Engineering

INSPECTION PROCEDURES USED

37551	Onsite Engineering
61726	Surveillance Observations
62707	Maintenance Observations
71707	Plant Operations
71750	Plant Support Activities
92901	Followup - Plant Operations
92903	Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-382/9613-01	VIO	Failure to follow procedure regarding configuration control - three examples (Section O2.1)
50-382/9613-02	URI	Review safety significance of using a check valve as containment isolation for CCW to containment fan coolers (Section O2.2)
50-382/9613-03	VIO	Failure to enter appropriate TS for inoperable WCT fans (Section O8.1)
50-382/9613-04	VIO	Failure to exercise the DCT bundle manual isolation valves (Section M1.2)

50-382/9613-05	NCV	BRGM B inoperable due to not having an independent power supply (Section E2.1)

Closed

50-382/9613-05	NCV	BRGM B inoperable due to not having an independent power supply (Section E2.1)
50-382/9306-10	IFI	Evaluation of calculational methodology (Section E8.1)
50-382/9605-03	URI	Review results of the licensee LCO entry assessment (Section O8.1)

Discussed

50-382/9613-05	NCV	BRGM B inoperable due to not having an independent power supply (Section E2.1)
50-382/94402-02	IFI	Review corrective actions for unacceptable weld joint configuration (Section M8.1)

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
BRGM	broad range gas monitor
CCW	component cooling water
CFR	Code of Federal Regulations
CR	condition report
DCT	dry cooling tower
EP	emergency preparedness
IST	inservice testing
LCO	limiting conditions for Operation
NRC	U.S. Nuclear Regulatory Commission
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
WCT	wet cooling tower