



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

JAN 24 1994

Docket: 50-382  
License: NPF-38

Entergy Operations, Inc.  
ATTN: Ross P. Barkhurst, Vice President  
Operations, Waterford  
P.O. Box B  
Killona, Louisiana 70066

SUBJECT: NRC INSPECTION REPORT 50-382/93-32

Thank you for your letter dated December 28, 1993, in response to our letter and Notice of Violation dated November 29, 1993. We have reviewed your reply and find it responsive to the concerns raised in our Notice of Violation. We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained.

Sincerely,

A. Bill Beach, Director  
Division of Reactor Projects

cc:  
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Entergy Operations, Inc.

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JAN 24 1994

bcc to DMB (IE01) \\\

bcc distrib. by RIV:  
L. J. Callan  
Section Chief (DRP/D)  
MIS System  
RIV File  
Section Chief (DRP/TSS)

Resident Inspector  
Lisa Shea, RM/ALF, MS: MNBB 4503  
DRSS-FIPS  
Project Engineer (DRP/D)

RIV:DRP/D	C:DRP/D	D:DRP		
WBJones;df	TFStetka	ABBeach		
1/24/94	1/24/94	1/24/94		

JAN 24 1994

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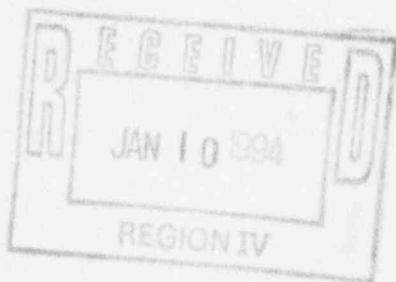
RIV:DRP/D ✓	C:DRP/D ✓	D:DRP		
WBJones;df	TFStetka	ABBeach		
1/24/94	1/24/94	1/24/94		



**ENTERGY**

Entergy Operations, Inc.

R. F. Burski



W3F1-93-0373

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December 28, 1993

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Subject: Waterford 3 SES  
Docket No. 50-382  
License No. NPF-38  
NRC Inspection Report 93-32  
Reply to Notice of Violation

Gentlemen:

In accordance with 10 CFR 2.201, Entergy Operations, Inc. hereby submits in Attachment 1 the response to the violation identified in the subject Inspection Report.

If you have any questions concerning this response, please contact B.R. Loetzerich at (504) 739-6636.

Very truly yours,

R.F. Burski  
Director  
Nuclear Safety

RFB/BRL/ssf  
Attachment

94-0394

cc: J.L. Milhoan (NRC Region IV), D.L. Wigginton (NRC-NRR),  
R.B. McGehee, N.S. Reynolds, NRC Resident Inspectors Office

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ATTACHMENT 1

ENTERGY OPERATIONS, INC. RESPONSE TO THE VIOLATION IDENTIFIED IN  
INSPECTION REPORT 93-32

VIOLATION NO. 9332-01

Technical Specification 6.8.1 requires, in part, that written procedures be established, implemented, and maintained covering the activities referenced in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Section 1 of Appendix A of Regulatory Guide 1.33 requires safety-related activities to be covered by written procedures, which includes maintenance of the ultimate heat sink.

System Operation Procedure OP-003-004, Revision 6, "Condensate Makeup", requires that the recirculation header isolation valve, CMU-1131, be closed after transferring water from the demineralized water storage tank to the condensate storage tank.

Contrary to the above, on August 17, 1993, Valve CMU-1131 was opened and left in the open position until October 19, 1993. As a result of this misalignment, the automatic makeup system for the safety-related wet cooling tower basins did not function as designed, allowing the level of the basins to decrease to a point below the Technical Specification required minimum level.

This is a Severity Level IV violation. (Supplement I) (382/9332-01)

RESPONSE

(1) Reason for the Violation

Entergy Operations Inc. admits this violation and believes that the root cause is failure to follow procedure in that isolation valve CMU-1131 was allowed to remain deviated open instead of closed. Step 8.11.8.3 of procedure OP-003-004, "Condensate Makeup", requires that CMU-1131 be shut after the Condensate Storage Tank (CST) has been filled to the desired level and the Condensate Transfer Pump (CTP) has been secured from operation.

On August 17, 1993, Operations initiated a Locked Valve/Breaker Deviation Sheet per procedure OP-100-009, "Control of Valves and Breakers", to maintain CTP to CST recirculation isolation valve CMU-1131 open instead of locked closed. With the valve open, the CTP can pump water from the Demineralized Water Storage Tank (DWST) to the CST. This operation is accomplished per OP-003-004 and is the normal method for filling the CST.

CMU-1131 was deviated open from August 17 to October 19, 1993, because the high temperatures associated with that period necessitated that the CST be filled frequently. The CST supplies makeup water to numerous secondary systems and must be filled every other day for a 24 hour fill duration to meet the dependent system requirements during periods of high temperature. The practice of leaving CMU-1131 deviated open each time the CST was filled encouraged the development of a mindset within Operations that the deviation was acceptable because of frequent makeup requirements.

On the morning of October 19, 1993, Operations completed a water transfer evolution from the DWST to the CST per OP-003-004 with one exception. After the CST reached the desired level (95% full) and the CTP was secured from operation, Operations did not close CMU-1131 as required by that procedure.

Auxiliary Component Cooling Water (ACCW) pumps "A" and "B" were then started to remove heat from the Component Cooling Water (CCW) system. Each ACCW pump takes suction from its respective Wet Cooling Tower (WCT) water basin and discharges to a heat exchanger where the CCW is cooled. The ACCW returns to the WCT water basin by discharging spray below the WCT fans where heat is dissipated to the atmosphere by evaporation.

A few hours later, ground isolation on a control room annunciator cabinet resulted in constant audible and visible alarms. These alarms were the expected result of annunciator ground troubleshooting activities. However, the constant alarms on the control room annunciator panel and the plant monitoring computer may have masked the need to perform additional WCT water basin level checks.

In addition, a causal factor existed in that the WCT basin Hi/Lo alarms annunciate when their respective basin is 97.5% full (Lo) or 99% full (Hi). The individual alarm does not indicate whether the high or low limit has been met. Furthermore, the WCT basin Hi/Lo

alarms annunciate frequently as a result of high levels due to makeup, rain or water temperature increase. This may have contributed to desensitizing the operators to this annunciator.

That evening, an oncoming shift discovered that both WCT basins were less than 97% full. At that time, Operations declared both trains of Ultimate Heat Sink (UHS) inoperable and entered action b of Technical Specification 3.7.4. In addition, those systems affected by UHS were declared inoperable and their associated action statements were entered. Technical Specification 3.0.3 was entered because the condition was not specifically addressed by all of the associated action requirements.

Entergy Operations Inc. believes that as a result of having CMU-1131 open, a level of approximately 60% in the DWST, and a makeup requirement for the WCT basin, that a nitrogen gas bubble became entrained in the DWST makeup line to the WCT water basin. This gas bubble restricted or prevented gravity feed makeup from entering the WCT water basin until CMU-1131 was closed. The basis for this scenario is documented in Licensee Event Report number 93-006, which was submitted to the NRC via Entergy Operations letter number W3F1-93-0199, dated November 18, 1993.

Condition Report CR-93-190 was initiated on October 19, 1993, and a Root Cause Investigation, RCI 93-009, was conducted for this event. During the Root Cause Investigation, it was discovered that one Operations' shift had a potential indicator of problems with makeup to the WCT basins, but did not formally identify the problem. According to the RCI, the problem was incorrectly associated with inadequate pressure to gravity feed the WCT water basins. Thus, Operations missed an opportunity to identify this problem during a precursor event.

(2) Corrective Steps That Have Been Taken and the Results Achieved

Immediate corrective action involved closing CMU-1131 upon identification of the low level in the WCT water basins. As a result, the WCT water level in basin 'A' was restored to greater than 97% full and the associated train of UHS and those systems affected by that train were declared operable. The associated Technical Specification action statements (including Technical Specification 3.0.3) were exited upon declaration of the 'A' train operability.

Shortly after, the 'B' train was declared operable as the wet cooling tower 'B' water basin level was restored, and associated action statements were exited.

(3) Corrective Steps Which Will Be Taken to Avoid Further Violations

In addition to those corrective measures taken during the event, additional corrective actions will be taken to prevent recurrence:

1. Shift Supervisors will brief their shifts on this event to address the specific aspects of procedural compliance, procedure use and problem identification/questioning attitude.
2. Operations' Shift Logs will be revised to indicate that, at a minimum, the DWST level should be maintained higher than the piping loop in the turbine building.
3. Operations will investigate alternate methods of system valve lineups.
4. Operations will develop a Case Study on this event that stresses procedural compliance expectations.
5. Plant configuration changes will be implemented that provides WCT water basin low level alarms as an input to the PMC. Additionally, the WCT Basin Hi alarms will be removed from the control room annunciator panel.

(4) Date When Full Compliance Will Be Achieved

Corrective actions 1, 2 and 3 listed in Section 3 above will be completed by December 31, 1993. Corrective action 4 listed above will be completed by January 31, 1994. The last corrective action listed above has already been initiated as a design change structured to reduce annunciators in the control room, and will be completed prior to commencing Cycle 7 operation.