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

FEB 26 1996

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

SUBJECT: NRC INSPECTION REPORT 50-382/95-21

Thank you for your letter of February 14, 1996, in response to our letter and Notice of Violation dated January 16, 1996. 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,

J. E. Dyer, Director
Division of Reactor Projects

Docket: 50-382
License: NPF-38

cc:
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bcc to DMB (IE01)

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Resident Inspector
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MIS System
RIV File
Leah Tremper (OC/LFDCB, MS: TWFN 9E10)

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ENTERGY

Entergy Operations, Inc.
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R. F. Burski
Director
Nuclear Safety
Waterford 3

W3F1-96-0018
A4.05
PR

FEB 15 1996

February 14, 1996

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 95-21
Reply to Notice of Violation

Gentlemen:

In accordance with 10CFR2.201, Entergy Operations, Inc. hereby submits in Attachment 1 the response to the violation identified in Appendix A of the subject Inspection Report.

Please contact me or Robert J. Murillo at (504) 739-6715 should there be any questions concerning this response.

Very truly yours,

W H Pendergrass
for
R.F. Burski
Director
Nuclear Safety

RFB/RJM/ssf
Attachment

cc: L.J. Callan (NRC Region IV), C.P. Patel (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 APPENDIX A OF INSPECTION REPORT 95-21

VIOLATION NO. : 9521-01

During an NRC inspection conducted from November 27, through December 1, 1995, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for Enforcement Actions, " (60 FR 34381; June 30, 1995, the violation is listed below:

> 10 CFR 50.49(a) requires the licensee to establish a program for qualifying electrical equipment. Site Directive W4.103, "Equipment Qualification, " Section 5.1.1.2.b, which implements the requirements of 10 CFR 50.49(a), states that detailed engineering analyses of specific elements are performed to establish and maintain qualification.
>
> Contrary to the above, in October 1994, the licensee failed to perform proper, detailed engineering analysis of specific elements, solenoid valves in harsh environments, to establish and maintain equipment qualification. The elastomer service temperature for normally energized solenoids valves was not properly established, which resulted in a 41-51 percent reduction in the originally calculated equipment qualification service life for 19 solenoid valves.

This is a Severity Level IV violation (Supplement I) (382/9521-01)

RESPONSE

(1) Reason for the Violation

Waterford 3 admits the violation. The reason for the violation was the failure to account for the difference between the internal and external service temperatures in the analysis and the EQ documentation files for normally energized solenoid operated valves (SOVs).

Waterford 3, in October 1994, conducted service temperature testing on eleven (11) different ASCO model valves which encompassed the ASCO SOVs installed at Waterford 3. This testing was performed by placing thermocouples on the exterior surface of the valves in the core disc area. The service life was updated in the EQ documentation files based on the original thermal aging performed by ASCO in their qualification program and on the testing performed in October 1994.

In September 1995, Waterford 3 performed additional testing on a model 2068323F SOV. This testing was performed by placing thermocouples in the interior of the valve and on the exterior surface near the core disc. This testing established that there was a temperature difference between the interior and exterior of the valve, 13.4°F at a 104°F ambient and 16.2°F at 120°F. The service life for the ASCO solenoid valves in the EQ documentation files was based on the original thermal aging performed by ASCO and the testing performed in October 1994 to establish the Waterford 3 service temperatures. The service life was adjusted by adding the conservative temperature rise from the September 1995 test to the results of the October 1994 test.

Fifteen solenoid valves had their EQ service life reduced from 26.4 to 12.94 years, and four solenoid valves had their EQ service life reduced from 9.3 to 5.47 years. The remaining solenoid valves had a reduced EQ service life of greater than 40 years.

Primary System Sample Valve PSL-ISV-0105 exceeded its service life replacement date of April 15, 1995 with the revised service life. This date was before the start of Refuel 7 which commenced on September 22, 1995. The SOV was reevaluated by taking into consideration that the SOV is deenergized during refueling outages. A conservative estimate of the SOV service conditions based on past refuel outages is that 10% of the time the SOV is deenergized while being energized the remaining 90% of the time. This increased the qualified life from 5.47 years to 5.93 years with a revised replacement date of September 30, 1995. The EQ service life was therefore not exceeded by the time the plant started Refuel 7. This valve was replaced during Refuel 7. This evaluation was documented in Document Revision Input Form (DRIF) EQF-261. Waterford 3 concluded that none of the affected SOVs installed in the plant, including valve PSL-ISV-0105, exceeded their qualified life.

Thus, while the original analysis contained in the Environmental Qualification Assessment did not include a temperature rise, the EQ qualification documentation was revised, based on the original qualification methodology, to account for the difference between the internal and external service temperatures. This difference was not considered sufficiently significant to affect the operability of the SOVs.

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

Design Engineering performed a reevaluation of all ASCO SOVs documented in DRIF EQF-261 incorporating information obtained during the supplemental temperature rise testing on the ASCO Model 2068323F. This temperature information was considered sufficiently accurate because: (1) the temperature data was obtained adjacent to the SOV coil, and (2) the

2068323F coil is rated at 20 watts as opposed to 10.5 watts which is the most common coil.

The evaluation performed in DRIF EQF-261 evaluated all EQ ASCO normally energized SOVs. There was no reevaluation required for the normally deenergized SOVs since their service temperature is considered equal to the maximum anticipated normal ambient conditions.

There was one ASCO SOV identified, PSLISV0105 ICNTRL, EQF-261, that required replacement during Refuel 7. Condition Identification (CI) CI #299299 was generated on 10/4/95 to replace this SOV during Refuel 7. The SOV was replaced in accordance with Work Authorization (WA) #01120184 on 10/27/95. There were no additional SOVs that were required to be replaced prior to Refuel 8.

There are no generic implications associated with this technical issue. The ASCO SOVs are the only EQ Waterford 3 plant components that have been tested for service temperatures. Therefore, there are no installed components which are potentially subject to the same observations.

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

Future service temperature testing similar to that performed for ASCO SOVs will measure internal temperature or incorporate a temperature rise to the measured surface temperature.

The revised information will be incorporated in the following documents:

- Environmental Qualification Assessment to EQ File 03.02
- Environmental Qualification Maintenance Input (EQMI)
- Station Information Management System (SIMS)

Also, Design Engineering Guide EQ/E-I-106 will be revised to ensure that future service temperature testing similar to that performed for ASCO SOVs will measure internal temperature or incorporate a temperature rise to the measured surface temperature.

(4) Date When Full Compliance Will Be Achieved

The foregoing changes will be completed by March 15, 1996 , at which time Waterford 3 will be in full compliance.