



ENTERGY

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March 17, 1994

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Vice President
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Grand Gulf Nuclear Station

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Response to Violation for Failure to Take Adequate
Corrective Actions
Report No. 50-416/94-03, dated 02/15/94
(GNRI-94/00038)

GNRO-94/00044

Gentlemen:

Entergy Operations, Inc. hereby submits the response to the
Notice of Violation 50-416/94-02-01.

We are equally concerned with the violation identified associated
with testing of breaker relay coils.

Following the testing of breaker closing coils, the associated
breakers were cycled to ensure proper breaker operation.
Therefore, plant personnel felt that proper operation of the
breaker verified that all pertinent components were operating
properly. The breakers that were involved in the testing have
operated with no anomalies to date. Therefore, plant personnel
have reasonable assurance that there are no operability concerns
with the subject breakers. However, we agree that further
evaluation of affected coils should be performed to identify
possible degradation.

While trying to reconstruct the incident concerning the drywell
purge compressor control circuit, it was concluded that the
processes that existed in 1984 for prioritizing modifications
were not fully effective. Documentation detailing the reasons for
deferral of the modification package could not be located. Since
1984, GGNS programs and processes have been upgraded. Therefore,
we feel that a similar incident would not occur at this time.

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Yours truly,



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Notice of Violation 94-02-01

10 CFR 50 Appendix B, Criterion XVI, requires that measures shall be established to assure that conditions adverse to quality, such as malfunctions and deficiencies are promptly identified and corrected. 10 CFR 50 Appendix B is implemented by the Quality Assurance Topical Report, GGNS-TOP-1A. Section 16.5.2 of the Topical Report requires that procedures shall provide for the evaluation of conditions such as malfunctions and deficiencies. Section 16.5.3 of the Topical Report requires follow-up reviews by the appropriate organizations to verify proper implementation of the corrective action.

Contrary to the above:

- (1) On July 15, 1993, the licensee became aware of, or should have been aware, that four safety-related breaker close coils may have been subjected to operating conditions beyond their rating, during licensee testing but this condition was not evaluated. The breaker close coils involved were for Division I and II emergency diesel generator output breakers, and Division I RHR pump motor breaker and Division I drywell purge compressor motor.
- (2) In 1983, during preoperational testing the licensee identified a design problem with the control circuit for the safety-related drywell purge compressors that could defeat or degrade the function of the safety-related Drywell Purge System and prepared a modification to correct the problem, but the modification was not implemented until November, 1993, after the circuit actually malfunctioned during performance of a test.

I. Admission or Denial of the Alleged Violation

Entergy Operations, Inc. admits to this violation.

II. The Reason for the Violation, if Admitted

Minimum Voltage Testing of Breaker Closing Coils

In 1990, design engineering personnel determined that during degraded voltage conditions closing coils on certain safety-related breakers would receive voltages less than vendor recommended operating voltages. The corrective action taken to resolve this issue was the development of a test to demonstrate that the coils would operate at a voltage less than vendor recommendations. The test was performed in 1990, 1992 and 1993.

Following the test in 1993, a malfunction of the closing coil occurred on the Div. II EDG output breaker. The work order identified the minimum voltage pickup test as the cause of coil failure. Upon evaluating the coil, it appeared that the coil had been overheated and some deformation had occurred.

The failure of the coil was attributed to the method of testing. During development of the test instructions, coil operation at a lower voltage was considered and the long term effects evaluated. However, the cycle duty of the component was not addressed due to an oversight. This resulted in the coils being energized for a longer time than actually designed for. The test instructions were revised. However, the long term effects on the three remaining coils being tested were not formally evaluated.

Following the performance of minimum voltage testing, the respective breaker is cycled to ensure proper operation of the breaker. The operation of the breaker demonstrates proper operation of breaker components. If the coil had failed during the minimum voltage test, it would have been evident, as it was in the case of the Div. II EDG coil. Therefore, immediate operability of the three remaining breakers was not questioned. It is not apparent that the testing adversely affected the expected life of the coils. All of the affected breakers were cycled and no similar failures or malfunctions have occurred to date.

Following the identification of the deficient test procedure, the failed closing coil was replaced and the test instruction revised. The coil failure was considered an isolated case which was directly attributed to a specific action. As a result of this conclusion, no document was initiated to formally evaluate the long-term effects of the original test on the remaining coils.

Corrective Actions

The three remaining closing coils tested using the original test method will be replaced during the next scheduled system outage. A visual inspection will be performed on the removed coils to determine if overheating or deformation has occurred. To date, there have been no malfunctions during operations of the subject breakers.

An evaluation will be performed to determine the effects of the original testing on the subject closing coils.

Additionally, this incident will also be sent to appropriate plant personnel for required reading to heighten their awareness of the cause and actions as a result of this violation.

Drywell Purge Compressor Control System

During RFO6 surveillance testing, it was determined that a relay race was occurring in the drywell purge control circuitry that could prevent the purge compressor from starting. Further review of this occurrence determined that this incident was similar to an incident that occurred in 1983.

In 1983, a modification request was generated to document a potential problem in the drywell purge control circuitry and recommend a potential resolution. The modification package was not implemented at that time. Following the occurrence in 1993, the modifications were made to prevent recurrence.

In this case, the design implementation process utilized by GGNS did not consistently maintain appropriate attention to an issue involving equipment deficiencies. The existing process relied heavily on a "champion" to ensure equipment issues which were not immediate threats to plant operation received adequate resolution in a timely manner.

Corrective Actions

GGNS programs and processes have changed significantly since the plant's startup testing phase. It is felt that our current programs are sufficient to minimize recurrence of this type deficiency.

The drywell purge compressor control logic was modified during the last refueling outage and has been satisfactorily tested to ensure proper operation.

A review of old modification (prior to 1987) packages that are open will be performed to determine the safety significance and as appropriate deficiency documents will be initiated to ensure a timely assessment of the need for the modification.

III. Date When Full Compliance Will Be Achieved

All actions are scheduled to be completed by September 30, 1994.