



**Entergy
Operations**

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December 21, 1990

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
Report No. 50-416/90-23,
dated November 23, 1990
(MAEC-90/0295)

GNRO-90/00003

Gentlemen:

Attached is the Entergy Operations, Inc. response to the subject Notices of Violation.

Two of the Violations (90-23-01 and 90-23-02) suggest additional areas where improvement may be warranted: corrective actions implemented during an outage which could be insufficient to prevent recurrence, and restoration of systems from outage maintenance and testing. Entergy Operations shares the NRC's concern in these areas and intends to take steps beyond those necessary to address the specific violations.

We believe one of the major factors contributing to successful outages at Grand Gulf is the critique conducted shortly after each outage which identifies problems, deficiencies and inefficiencies in order to evaluate and implement improvements for subsequent outages. We intend to include the generic implications of outage corrective actions and system restoration in our outage critique process. In this respect, the following goals have been identified at this time:

- o Improve the timing associated with issuing design change documents from the Design Group to allow sufficient time for preinstallation reviews.
- o Allow more time for the coordination between Operations, Plant Modifications and Construction, and System Engineering concerning the construction and testing of Design Change Packages.

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- o Identify methods for improving the utilization of Test Directors to better control complicated Surveillance Test Evolutions.
- o Identify methods for stressing prevention of reportable events early in the planning stages of an outage in order to reduce the overall number of occurrences.
- o Identify methods for improving management oversight during the course of an outage. The goal is to ensure that a degree of management independence from the actual outage work is established, so that, when an event occurs, management will be able to assess the adequacy of corrective actions in a more objective manner.

Upon completion of the above evaluations, Entergy Operations, Inc. will initiate actions deemed necessary to improve performance during future outages.

Another factor which could have contributed to the cited violations may have been our endeavor to accomplish too much work (both regulatory-related and plant enhancement) during the past refueling outage. In striving to be responsive to regulatory initiatives through timely implementation of improvements, potential adverse effects on a refueling outage are not always well-evaluated at the time commitments are made to the NRC. Outage planning and management is a complex process which can be difficult to do well, particularly if the outage workscope continues to increase as the outage approaches. Entergy Operations intends to explore this more fully.

During RFO4, GGNS initiated a significant level of effort to address various regulatory improvements associated with such issues as Service Water, Instrument Air, MOV Testing, etc. For instance, in response to Generic Letter 89-13 GGNS committed to conducting thermal performance testing of safety-related SSW heat exchangers. Implementation of the commitment required the installation, during RFO4, of numerous temperature instruments, annubars, isolation valves, tubing and dp gauges for two of the three SSW loops. Approximately 11,700 man-hours were necessary to complete the work (about 3,000 man-hours pre-outage and 8,700 man-hours during the outage).

In retrospect, we may have been able to do a better job in scheduling some of this work, as well as other plant enhancements, across several refueling outages (prioritized based on safety significance, cost, etc.) when we made commitments to the NRC. Doing so would have reduced the level of activity (and complexity) during RFO4 and would have, we believe, reduced the potential for events such as described in the subject violations.


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For the future, we intend to focus on maintaining a reduced level of activity and complexity during refueling outages. We expect such an approach to pay dividends in improved safety during the outage, increased quality of work and reduced cost. In part, this will require us to place more attention on outage effects when addressing regulatory initiatives and developing commitment schedules.

We anticipate a challenge in the development of an appropriate mix of safety, priority, cost and scheduling efficiency to be used as a basis for scheduling regulatory-based outage activities. In this respect we are encouraged by the NRC's initiatives to develop an integrated regulatory requirements implementation schedule (IRRIS) program in response to the results of the Regulatory Impact Survey conducted last year. It is our understanding that the pilot phase of IRRIS will be directed at the development of a basis for scheduling prioritization of regulatory initiatives as well as licensee-originated enhancements.

Consequently, I have requested my Licensing Staff to investigate the potential application of IRRIS methodologies at GGNS.

Yours truly,



WTC/JS/cg
attachments
cc: (See Next Page)

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Reply To Notice Of Violation
50-416/90-23-01

10CFR 50, Appendix B, Criteria XVI requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and defective material and equipment are promptly identified and corrected. Contrary to above:

- A. Adequate corrective action was not taken to prevent recurrence following identification of a condition on October 9, 1990 when secondary containment door 1A401 was left open. On October 20, 1990, door 1A401 was found open again when core alterations were in progress.
- B. Adequate corrective action was not taken following an event on October 14, 1990 when a contract employee inadvertently bumped the handle to breaker 52-152109 that resulted in several drywell, containment, and auxiliary building isolation valves closing. The breaker was inadvertently bumped again on October 15 and 30, 1990.

I. The Reason For The Violation

- A. Secondary Containment Door 1A401 Found Open During Core Alterations

During refueling outages, the number of personnel passing through secondary containment doors increases substantially. After the first event cited above, contract personnel were posted at all secondary containment doors that were used for normal access to ensure secondary containment integrity.

Subsequent to this action, a decision was made by plant personnel to provide roving security personnel who would be required to verify, once per 10 minutes, that containment doors were closed. This would limit the time any door was not adequately closed to 10 minutes and would facilitate more flexible working hours for plant personnel. However, the Operations Superintendent was not contacted prior to making the decision to change from continuously posted personnel to roving security personnel to ensure the requirements of the Technical Specifications were maintained for secondary containment.

These incidents are documented and reported in Licensee Event Report Number 90-018 (AECM-90/0194, dated November 6, 1990).

B. Isolation Due To Inadvertent Breaker Operation

Power supply breaker 52-152109 is located on the end of Motor Control Center (MCC) 15B21, just below the power panel. The breaker is designed such that the operating handle protrudes out from the panel and the trip position is in the downward direction. This configuration, in addition to the physical location of the breaker makes it susceptible to being bumped; thereby, causing an inadvertent trip.

The corrective actions which installed temporary covers over sensitive breakers were intended to prevent the breaker from opening due to a bump or casual movement made by personnel working in the vicinity, such as occurred in the first two incidents cited above. However, these covers were not designed to inhibit the breaker from being manually opened by conscious intent. Consequently, the cover design was insufficient to prevent the third incident which involved a contract employee stumbling and using the breaker handle to stop his fall.

These incidents are documented and reported in Licensee Event Report Number 90-019 (AECM-90/0195, dated November 13, 1990).

II. The Corrective Steps That Have Been Taken and The Results Achieved

The discussions below describe steps which have been taken in response to the incidents delineated in Section I.

A. Secondary Containment Door 1A401 Found Open During Core Alterations

1. Upon discovery of this condition on October 20, 1990 (during core alterations,) Door 1A401 was immediately closed. The Control Room was notified and the appropriate actions for Technical Specifications 3.6.6.1 were taken.
2. Access to and from secondary containment was limited to specific doors. These doors were posted at all times with Security personnel to ensure proper closure after each use. Other normal access doors were barricaded and labeled with "Do Not Use" signs to prevent use. Doors that were not used for normal access to and from secondary containment were verified closed by roving Security personnel during their hourly building tours.
3. The Security Superintendent issued a memorandum to appropriate personnel detailing the requirements for secondary containment doors. Personnel were informed not to make any changes to these requirements without the Operations Superintendent's approval.

B. Isolation Due To Inadvertent Breaker Operation

1. Plant Management held briefings with all contracted personnel associated with work activities being performed in switchgear rooms. The purpose of these briefings was to increase the level of consciousness of personnel working inside switchgear rooms by exercising caution around equipment and components in the area.
2. An Engineering Evaluation Request was initiated to determine the feasibility of placing permanent rigid covers over sensitive breakers located on MCCs. As an interim measure, a more durable type cover was installed on applicable breakers to prevent inadvertent operation.

III. The Corrective Steps That Will Be Taken To Avoid Further Violation

A. Secondary Containment Door 1A401 Found Open During Core Alterations

The actions taken in Section II.A were adequate to preclude further violations during the refueling outage. These actions will continue to be utilized during future refueling outages until more viable means for controlling access through secondary containment doors can be pursued and implemented.

B. Isolation Due To Inadvertent Breaker Operation

Administrative Procedure 01-S-16-2, Modification Work Permits, will be changed to implement additional walkdown and inspection requirements for sensitive plant areas (e.g., Switchgear Rooms, etc.) during Operational Conditions 3, 4, and 5.

IV. The Date When Full Compliance Will Be Achieved

Permanent controls for accessing secondary containment doors during plant shutdowns will be evaluated and implemented prior to the next scheduled refueling outage.

Changes to Administrative Procedure 01-S-16-2 will be implemented by January 31, 1991.

Generic Implications

The failure of corrective action to prevent recurrence is unusual and unacceptable at Grand Gulf. While we do not feel that the two instances cited in this Notice of Violation are indicative of a programmatic breakdown, it does appear that there are circumstances unique to outages which may dictate the need for additional controls and/or management oversight on the corrective action process. Grand Gulf is confident that the corrective actions discussed above are sufficient to prevent recurrence of events identified in the Notice of Violation. However, to more fully explore the effect of outages, we intend to evaluate selected areas of enhancement for future outages. Due to some overlap with the concerns of Notice of Violation 90-23-02, our plans are summarized in the cover letter (GNRO-90/00003) to this response.

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50-416/90-23-02

Technical Specification 6.8.1.a. requires that written procedures be established, implemented, and maintained covering activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A recommends procedures covering the following areas: Surveillance testing and modification work.

- A. Surveillance Procedure 06-OP-1P75-R-0003, Standby Diesel Generator II, 18 Month Functional Test, Attachment VII, states that during restoration, following each test, the system operating instruction (SOI) may be used as required.

Contrary to the above, neither Surveillance Procedure 06-OP-1P75-R-0003, nor the SOI had adequate caution steps for the restoration of systems from an abnormal condition to prevent the loss of shutdown cooling on October 26, 1990.

- B. Technical Special Test Instruction (TSTI) 1L62-90-001-0-S, Division I, Class 1E Uninterruptible Power Supply Inverter 1Y87 Test, steps 5.10.1 and 5.10.2 required cable 1APY871 be disconnected at inverters 1Y89 and 1Y87. Restoration step 7.5.9 only required cable 1APY871 be reconnected at inverter 1Y89.

Contrary to the above, TSTI 1L62-90-001-0-S was inadequate in that it did not contain appropriate steps for the restoration of power to inverter 1Y87. Cable 1APY871 was not reconnected to inverter 1Y87, causing an ESF actuation of the Control Room Standby Fresh Air Unit A.

I. The Reason For The Violation

- A. Loss of Shutdown Cooling Due To Inadequate Procedures

On October 26, 1990, two surveillance procedures were being performed simultaneously by Instrumentation and Control (I&C) technicians and Operations personnel. Operators were in the process of restoring equipment to conclude Loss of Coolant Accident (LOCA) testing when they noticed that power supply breaker 52-153109 was open. They assumed that the breaker had been opened per their surveillance and requested that it be closed. Breaker 52-153109 was actually opened per the I&C surveillance.

Power supply breaker 52-153109 was closed due to inadequate procedural guidance on the use of information tags to control in-progress test activities. Although tagging programs are in place, no written guidance on their use during testing activities was implemented.

The lack of verbal communications between the operator involved in this incident and the test directors in charge was also a contributing factor. Operators discussed, among themselves, the fact that the breaker was open, but failed to contact the test directors to verify that breaker 52-153109 was not connected to a surveillance test in progress.

This incident is documented and reported in Licensee Event Report Number 90-022 (AECM-90/0205, dated November 23, 1990).

B. Actuation of Control Room Standby Fresh Air Unit "A"

During Refueling Outage 4, a Design Change to replace several inverters in the Uninterruptible Power Supply (UPS) System was performed which included inverter 1Y87. During implementation of the design change, power for load distribution panel 1Y89 was being supplied by the old inverter 1Y87. During a special test of the UPS, personnel were instructed to open the spare main breaker. Upon opening of the spare main breaker, the load distribution panel was deenergized, resulting in a loss of power to a portion of the reactor low water level logic.

This incident was determined to have been caused due to an inadequate technical review of the special test instruction prior to issuance. One end of cable 1APY871 which was disconnected in a previous step, was not required to be reconnected by the test instruction.

Additionally, this test was successfully performed on three other panels prior to the event. During the previous tests, a different engineer ensured that both leads of the cable were connected. However, he failed to correct the test instructions. An adequate technical review would have identified the deficiency and corrected it prior to the instruction being issued.

This incident is documented and reported in Licensee Event Report Number 90-24 (AECM-90/0218, dated November 11, 1990).

II. The Corrective Steps That Have Been Taken And The Results Achieved

A. Loss of Shutdown Cooling Due To Inadequate Procedures

1. The Operations Superintendent briefed the test directors responsible for the overall implementation of the surveillance tests in progress at the time of the shutdown cooling isolation. The purpose of this briefing was to stress the importance of maintaining complete control over tests from beginning to restoration of the system.
2. As an interim measure, Standing Orders were issued to implement guidance on the use of tags on valves, breakers, etc., that are placed out of their normal position for testing purposes. This process will, in part, require placing a tag (e.g., Red Tag, Work Incomplete Tag, Information Tag, etc.) on the handswitch of the valve affected by the test to denote testing is in progress. These guidelines will be used until a formalized tagging program is implemented.

B. Actuation of Control Room Standby Fresh Air Unit "A"

1. Special Test Instruction 1L62-90-0001-0-S was corrected prior to continuing the test.
2. The test directors and technical reviewers were counseled on verbatim compliance and the importance of adequate reviews for any and all special tests.
3. Administrative controls governing the technical review process were reviewed and determined to be adequate.

III. The Corrective Steps That Will Be Taken To Avoid Further Violations

A. Loss of Shutdown Cooling Due To Inadequate Procedure

An evaluation of current testing methodologies will be performed by various members of plant management. Upon completion, a program will be developed to provide the appropriate outage controls to prevent further violations.

B. Actuation of Control Room Standby Fresh Air Unit "A"

The actions described in Section II.B above are adequate to provide reasonable assurance to prevent further violations of this nature.

IV. Date When Full Compliance Will Be Achieved

Full compliance will be achieved by March 31, 1991 for actions described in Section II. A above.

Generic Implications

The corrective actions discussed above are sufficient to prevent recurrence of the individual events cited. However, Grand Gulf management shares the NRC's concern about the need to place greater attention on activities associated with restoration of systems during outages. We feel that the Notice of Violation has correctly focused on an improvement area which we intend to evaluate for future outages, as discussed in the cover letter (GNRO-90/00003) to this response.

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50-416/90-23-03

10 CFR 50, Appendix B, Criteria III, Design Control, requires design control measures provide for verifying or checking the adequacy of design, such as performance of a suitable testing program.

Contrary to the above, design control testing was inadequate for the Horizontal Fuel Transfer System interlocks. The interlocks were not sufficiently tested to prevent the fuel transfer system carrier from contacting a fuel bundle when lowered from the vertical to the horizontal position.

I. The Reason For The Violation

A review of the GE specifications indicated that the original design intent was to prevent carrier movement while inserting/removing fuel and to prevent fuel insertion/withdrawal with the carrier not vertical. Original pre-op testing to verify design was performed appropriately to meet these requirements. The test was not written to detect any incidental contact of a suspended fuel bundle with the carrier while not in the vertical position because the designer did not consider this concern in his original specifications. However, during RF04 incidental contact of a suspended fuel bundle with the carrier in the horizontal position was discovered.

II. The Corrective Steps That Have Been Taken And The Results Achieved

- A. Fuel movement was terminated. A Limiting Condition for Operation (LCO) was entered and the HFTS was declared inoperable.
- B. A Material Nonconformance Report (MNCR #0241-90) was initiated to document the unacceptability of any incidental contact of fuel with the carrier and to recommend immediate corrective actions. As a result, the following actions were taken:
 - 1. A modification was issued to relocate the cam (trip plate), per the MNCR disposition, that operates limit switch 5 to approximately five feet west of the Fuel Handling Platform trolley centerline. This action will preclude future fuel bundle contact with the carrier or the carrier with a fuel bundle.
 - 2. Surveillance Procedure 06-OP-1071-V-0002 was performed following relocation of the trip plate to verify that operation of the HFTS upender is prohibited when the FHP trolley is in a zone that could come into contact with the HFTS carrier. The surveillance was satisfactorily completed.

III. The Corrective Steps That Will Be Taken To Avoid Further Violation

The corrective actions specified in II above are sufficient to prevent recurrence.

IV. The Date When Full Compliance Will Be Achieved

Full compliance has been achieved.