

50-4116



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 17, 1997

Mr. Joseph J. Hagan
Vice President, Operations GGNS
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

SUBJECT: COMPLETION OF LICENSING ACTIVITIES FOR GENERIC LETTER 96-01,
"TESTING OF SAFETY-RELATED LOGIC CIRCUITS," GRAND GULF NUCLEAR
STATION (TAC NO. M94681)

Dear Mr. Hagan:

On January 10, 1996, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 96-01, "Testing of Safety-Related Logic Circuits," to all holders of operating licenses or construction permits. The NRC issued GL 96-01 for three principal reasons:

1. Notify addressees about problems with testing of safety-related logic circuits;
2. request that all addressees implement the actions described within the GL; and
3. require that all addressees submit a written response to the NRC regarding implementation of the requested actions.

In GL 96-01, the NRC staff specifically requested that licensees take the following actions:

1. Compare electrical schematics and logic diagrams for the reactor protection system, emergency diesel generator load shedding and sequencing, and actuation logic for the engineered safety feature systems against plant surveillance test procedures to ensure that all portions of the logic circuitry, including the parallel logic, interlocks, bypasses, and inhibit circuits, are adequately covered in the surveillance procedures to fulfill the technical specification (TS) requirements. This review should also include relay contacts, control switches, and other relevant electrical components within these systems, utilized in the logic circuits performing a safety function; and
2. Modify the surveillance procedures, as necessary, for complete testing to comply with the TSs. Additionally, the licensee may request an amendment to the TSs if relief from certain testing requirements can be justified.

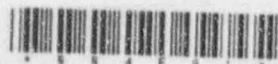
Furthermore, the NRC staff required that addressees prepare and submit the following:

1. A written response indicating whether or not the licensee would implement the actions requested above or propose an alternative action;

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2. a schedule for completing the requested actions or proposed alternative;
and
3. a response confirming completion of the requested actions.

In response to GL 96-01, you provided the letter dated April 19, 1996 (GNRO-96/00043) for Grand Gulf Nuclear Station, Unit 1 (GGNS). In this submittal, you stated that the GL recognized that some licensees may have already performed reviews of safety-related logic circuits and taken appropriate corrective actions, and these licensees were not required to perform any additional reviews unless modifications had been made to these circuits.

For GGNS, you stated that the adequacy of logic system functional tests (LSFT) for safety-related logic circuits had been reviewed during the implementation of the Improved Standard Technical Specifications (ISTS) at the station and this review included a review of individual procedures to confirm that interfaces with other procedures required for LSFT were appropriate. To verify LSFT requirements, a comparison of station electrical schematic drawings with surveillance procedures was performed. Procedure test scope and overlap points were documented on a set of controlled electrical schematic drawings by highlighting the logic tested by each procedure on the drawings. You discussed one discrepancy in the testing procedures that was discovered by the review, reported in Licensee Event Report 94-009-00, and corrected.

Further, you explained that modifications involving safety-related logic circuits are evaluated and tested to ensure functionality and that changes to procedures involving LSFT are reviewed against the marked-up schematic drawings and the detailed written descriptions in each applicable procedure. This is done to determine if there is any affect on the performance of the LSFT or to the surveillance procedure.

You stated that the LSFT is defined in the TSs as a test of the required logic components of a logic circuit. This is from as close to the sensor as practicable up to, but not including, the actuated device, and may be performed by any series of sequential, overlapping, or total system steps so that the entire logic is tested to verify operability of the circuit. Testing is limited to the logic circuits specified in the TSs.

You concluded, in the letter of April 19, 1996, that the review for ISTS implementation demonstrated that the current LSFT methodology at GGNS adequately tests the logic circuits that perform a safety function required by the TSs and meets the intent of GL 96-01.

We have reviewed your letter of April 19, 1996, and conclude that you have addressed the requested actions in GL 96-01. We requested that you notify us as to whether or not you would implement the two actions specified in the GL, and listed on page 1 of this letter, or propose an alternative action, and you have stated in your letter that these two actions had been completed at GGNS. An audit or inspection of these actions may be conducted at the site in the

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future to verify that you are in compliance with existing requirements for testing of safety-related logic circuits.

If you have any questions regarding this matter, please contact me at 301-415-1307.

Sincerely,

Jack N. Donohew, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-416

cc: See next page

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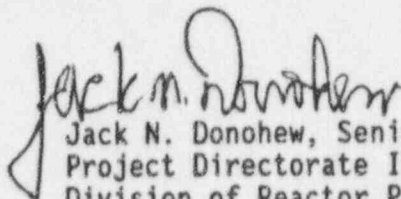
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Jack N. Donohew, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
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Docket No. 50-416

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Grand Gulf Nuclear Station

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