



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

April 22, 2010

Vice President, Operations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 – REQUEST FOR ADDITIONAL
INFORMATION RE: POWER RANGE NEUTRON MONITORING SYSTEM (TAC
NO. ME2531)

Dear Sir or Madam:

By application dated November 3, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093140463), Entergy Operations, Inc. (Entergy, the licensee), requested U.S. Nuclear Regulatory Commission (NRC) staff approval of an amendment to the Grand Gulf Nuclear Station, Unit 1, Technical Specifications to reflect installation of the digital General Electric - Hitachi Nuclear Measurement Analysis and Control Power Range Neutron Monitoring System.

The NRC staff reviewed the information provided in your application and determined that additional information is required in order to complete its review. The enclosed questions were discussed with Mr. G. Davant, et al., of your staff on April 12, 2010. Please provide a response to the enclosed questions within 30 days of the date of this letter.

The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at 301-415-2296 or via e-mail at fred.lyon@nrc.gov.

Sincerely,

A handwritten signature in black ink that reads "CF Lyon".

Carl F. Lyon, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

POWER RANGE NUCLEAR MONITORING SYSTEM UPGRADE

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

By application dated November 3, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093140463), Entergy Operations, Inc. (the licensee), requested U.S. Nuclear Regulatory Commission (NRC) staff approval of an amendment to the Grand Gulf Nuclear Station, Unit 1 (GGNS), Technical Specifications (TSs) to reflect installation of the digital General Electric - Hitachi Nuclear Measurement Analysis and Control Power Range Neutron Monitoring (PRNM) System. The NRC staff requests the following additional information from the licensee to complete its review of the proposed application.

1. In its application dated November 3, 2009, the licensee stated that the Oscillation Power Range Monitor (OPRM) Upscale function will not be relied upon to mitigate a stability event during the initial OPRM Monitoring Period (for a minimum of 90 days not to exceed one fuel cycle after plant startup following the 2012 refueling outage) and GGNS will implement Backup Stability Protection (BSP) measures specified in Boiling Water Reactor Owners' Group (BWROG) document OG-02-0119-260, GE to BWROG Detect and Suppress II Committee, "Backup Stability Protection (BSP) for Inoperable Option III Solution," as an alternate method for detecting and suppressing instabilities until the OPRM Monitoring Period has been successfully completed.

Please provide: (1) a description of the alternate method for detection and suppression of instabilities proposed in the application with respect to the approach stated in BWROG document OG-02-0119-260; (2) identification of the differences between the proposed alternate method and the Interim Corrective Actions specified in NRC Bulletin 88-07, "Power Oscillations in Boiling Water Reactors (BWRs)," dated June 15, 1988; (3) a description of which option is to be taken in compliance with five stability controls outlined in BWROG document OG-02-0119-260 when deliberate entry into the Controlled Entry Region occurs, and its analysis basis to confirm compliance; and (4) the reason to take more than 90 days (up to one fuel cycle) to activate the OPRM system for GGNS, when there are more than 90 reactor years of fully-armed operational data already available for OPRM system.

2. Please provide, in detail, the action to be taken (if applicable, to GGNS) should an error occur in the Global Nuclear Fuel-Americas (GNF-A) 3D MONICORE (3DM) software with application of a generic constant 10 percent bypass flow assumption in the BWROG's methodology to calculate the Boiling Boundary (BB) which can lead to an error in the calculation of the BB value which would be non-conservative with regard to stability.
3. Please provide a description for the proposed PRNM system design features other than an OPRM capability such as Detect and Suppress Solution – Confirmation Density and a

Enclosure

future plan to implement extended power uprate in conjunction with the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) for GGNS.

4. Please provide a realistic schedule to implement Option III stability solution for GGNS including an upgrade of the simulator for operator training.
5. Please identify which cycle-specific parameters specified in TS 5.6.5.a will be supported by the proposed two approved methodologies for TS 5.6.5.b. According to guidance in NRC Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," dated October 3, 1988, all the approved methodologies listed in TS 5.6.5.b should: (1) identify which cycle-specific parameters listed in TS 5.6.5.a corresponding to approved methods are used to calculate the parameters; and (2) identify the revision or date of approval, if applicable, for the methodologies listed in TS 5.6.5.b. In accordance with GL 88-16, please provide, as necessary, the revised TS 5.6.5.a and TS 5.6.5.b for NRC staff review.

April 22, 2010

Vice President, Operations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 – REQUEST FOR ADDITIONAL INFORMATION RE: POWER RANGE NEUTRON MONITORING SYSTEM (TAC NO. ME2531)

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Sincerely,
/RA/

Carl F. Lyon, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure:

Request for Additional Information

cc w/encl: Distribution via Listserv

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ADAMS Accession No: ML101090245

*memo dated

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