



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

July 12, 2016

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON SEVERE ACCIDENT
MITIGATION ALTERNATIVES FOR THE REVIEW OF THE GRAND GULF
NUCLEAR STATION, UNIT 1, LICENSE RENEWAL APPLICATION
ENVIRONMENTAL REVIEW (CAC NO. ME7385)

Dear Mr. Mulligan:

By letter dated October 28, 2011, Entergy Operations, Inc. (Entergy), submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), to renew operating license NPF-29 for Grand Gulf Nuclear Station, Unit 1, for review by the U.S. Nuclear Regulatory Commission (NRC or staff). The NRC is reviewing the information contained in the license renewal application and the associated environmental report. The staff has identified, in the enclosure, areas where additional information is needed to complete the review. Additional requests for additional information may be issued in the future.

As discussed with your staff, we request that you provide your responses no later than 60 days from the date of this letter. If you have any questions, please contact me at 301-415-6223 or by e-mail at david.drucker@nrc.gov.

Sincerely,

/RA/

David Drucker, Sr. Project Manager
Environmental Review and Projects Branch
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure:
As stated

cc w/encls: Listserv

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DISTRIBUTION: See next page

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*Concur on cover memo only

OFFICE	LA:DLR*	PM:RERP:DLR	BC:RERP:DLR	PM:RERP:DLR
NAME	IBetts	DDrucker	JDanna	DDrucker
DATE	6/ 30/16	7/5/16	7/6/16	7/12/16

OFFICIAL RECORD COPY

Enclosure

Letter to K. Mulligan from D. Drucker dated, July 12, 2016

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JDanna

MSayoc

BMizuno, OGC

Request for Additional Information on Severe Accident Mitigation Alternatives For Grand Gulf Nuclear Station License Renewal Environmental Review

On May 4, 2016, the Commission issued a decision (CLI-16-07) in the Indian Point license renewal proceeding, in which it directed the NRC staff to supplement the Indian Point Severe Accident Mitigation Alternatives (SAMA) analysis with sensitivity analyses. Specifically, the Commission held that documentation was lacking for two inputs (TIMDEC and CDNFRM) used in the MACCS computer analyses, and that uncertainties in those input values could potentially affect the SAMA analysis cost-benefit conclusions. The Commission therefore directed the NRC staff to perform additional sensitivity analyses.

The two inputs (TIMDEC and CDNFRM) are commonly used in the SAMA analyses performed for license renewal applications (LRAs). These two input values were generally based on the values provided in NUREG 1150, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants" and NUREG/CR-3673, "Economic Risks of Nuclear Power Reactor Accidents." The TIMDEC input value defines the time required for completing decontamination to a specified degree. The CDNFRM input parameter defines the cost (on a per person basis) of decontaminating non-farmland by a specified decontamination factor. The CDNFRM values used in NUREG-1150 (\$3,000/person for decontamination factor of 3 and \$8,000/person for decontamination factor of 15) stem from decontamination cost estimates provided in NUREG/CR-3673, the same 1984 economic risk study referenced in support of the decontamination time inputs. These decontamination cost inputs are commonly escalated to account for inflation.

The NRC staff believes the Commission's decision in CLI-16-07 may be applicable to the SAMA analysis performed for Grand Gulf Nuclear Station, inasmuch as that analysis may have also relied upon the NUREG-1150 values for TIMDEC and CDNFRM. We therefore request that Entergy Operations, Inc. (Entergy) either justify why CLI-16-07 does not apply to the SAMA analysis performed for Grand Gulf Nuclear Station or supplement the SAMA analysis with sensitivity analyses for the CDNFRM and TIMDEC values.

Entergy is requested to review the input values specified in CLI-16-07 for the Indian Point LRA, and (1) to apply the maximum values specified by the Commission (one year (365 days) for TIMDEC and \$100,000 for the CDNFRM values for the decontamination factor of 15) or, in the alternative, (2) to explain, with sufficient justification, its rationale for choosing any other value(s) for its sensitivity analyses. In any event, Entergy should execute sensitivity analyses for the release categories modeled that exceed 10^{15} Becquerels of Cs-137 released. Entergy is requested to evaluate how these sensitivity analyses may affect its identification of potentially cost-beneficial SAMAs. Finally, upon completing its sensitivity analysis, Entergy is requested to submit the spreadsheet (or equivalent table if another method is used) that conveys the population dose and off-site economic cost for each release category and integrates the results into a Population Dose Risk and an Offsite Economic Cost Risk for Grand Gulf Nuclear Station.

Enclosure