



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

September 25, 2018

Site Vice President
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUEST FOR
ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT
REQUEST TO REVISE SECTION 15.4.3.1 OF THE WATERFORD 3 UPDATED
FINAL SAFETY ANALYSIS REPORT TO ACCOUNT FOR FUEL MISLOAD
(EPID L-2018-LLA-0058)

Dear Sir or Madam:

By letter dated March 8, 2018 (Agencywide Documents Access and Management System Accession No. ML18068A705), Entergy Operations, Inc. (the licensee) submitted a license amendment request (LAR), which proposed changes to the Fuel Assembly Misload Event analysis as described in Section 15.4.3.1 of the Waterford Steam Electric Station, Unit 3 (Waterford 3) Updated Final Safety Analysis Report (UFSAR). Specifically, the license amendment would revise the Waterford 3 UFSAR, Section 15.4.3.1, to update the results for an inadvertent loading of a fuel assembly into the improper position.

After reviewing the licensee's submittal, the U.S. Nuclear Regulatory Commission staff has determined that additional information is required to complete the review. The additional information needed to complete the review is delineated in the enclosure to this letter. A response is requested within 30 days of the date of this letter.

If you have any questions, please contact me at 301-415-1390 or via e-mail at April.Pulvirenti@nrc.gov.

Sincerely,

A handwritten signature in cursive script that reads "April L. Pulvirenti".

April L. Pulvirenti, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:
Request for Additional Information

cc: Listserv

REQUEST FOR ADDITIONAL INFORMATION
REGARDING LICENSE AMENDMENT REQUEST
TO REVISE UFSAR SECTION 15.4.3.1
ENTERGY OPERATIONS, INC.
WATERFORD STEAM ELECTRIC STATION, UNIT 3
DOCKET NO. 50-382

By letter dated March 8, 2018 (Agencywide Documents Access and Management System Accession No. ML18068A705), Entergy Operations, Inc. (the licensee) submitted a license amendment request (LAR), which proposed changes to the Fuel Assembly Misload Event analysis as described in Section 15.4.3.1 of the Waterford Steam Electric Station, Unit 3 (Waterford 3) Updated Final Safety Analysis Report (UFSAR).

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the application and determined that additional information, delineated below, is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment.

The regulatory basis for the following two questions is to allow the NRC staff to evaluate compliance with applicable dose limits in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67, "Accident source term." The NRC staff's evaluation of compliance with 10 CFR 50.67 depends upon (1) the number of fuel pins postulated to fail as the result of a design-basis misloading event (Question 1) and (2) the threshold at which fuel damage is postulated to occur (Question 2).

Request for Additional Information (RAI) 1

Section 3.1, "Selecting the Worst Undetectable Misload," of the LAR indicates that an initial survey of a large number of potential misloads from several representative and potential future loading patterns is performed by comparing assembly reactivity, peaking factors, and proximity to incore detectors to determine several potential candidates for the worst undetectable misload. All candidates from this initial survey are then explicitly analyzed.

Please explain (or reference an approved methodology that explains) how candidates for the worst undetectable misload event may be reliably identified from the vast number of possibilities. If the specific methodology used has not been previously approved by the NRC staff, then expand upon and further justify the method used to identify the candidates for the worst undetectable fuel misload.

RAI 2

Section 3.2, "Determining Fuel Pin Failure," of the LAR states, in part:

The amount of fuel failure that occurs as a direct result of DNB [departure from nucleate boiling] is determined by counting the number of fuel rods that have a power greater than the radial peaking factor that is greater than the CECOR

measured value by an amount corresponding to a decrease in OPM [overpower margin] equivalent to the ROPM [required overpower margin] (as determined by CETOP).

Please clearly restate or explain the above quotation. In particular, the phrase "that have a power greater than the radial peaking factor that is greater than the CECOR measured value" compares a rod power to a radial peaking factor, makes consecutive "greater than" comparisons, and discusses "CECOR measured values" in the context of candidate misloads that could derive from several representative and "potential future loading patterns." As such, the meaning of the above statement cannot reasonably be inferred from the information available to the NRC staff.

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST TO REVISE SECTION 15.4.3.1 OF THE WATERFORD 3 UPDATED FINAL SAFETY ANALYSIS REPORT TO ACCOUNT FOR FUEL MISLOAD (EPID L-2018-LLA-0058) DATED SEPTEMBER 25, 2018

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***by email dated**

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