

NRR-PMDAPEm Resource

From: Wang, Alan
Sent: Tuesday, December 16, 2014 4:50 PM
To: 'BURMEISTER, BARRY M'; 'WILLIAMSON, DANNY H'; 'Joseph Clark (JCLARK@entergy.com)'
Cc: Burkhardt, Janet
Subject: River Bend Station, Unit 1, Request for Additional Information Regarding Heavy Loads (TAC No. MF2495)

Barry, Danny, and Joey,

By letter dated [July 29, 2013](#) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13214A334), as supplemented on [September 23, 2014](#) (ADAMS Accession No. ML14272A180), Entergy Operations, Inc. (Entergy, the licensee) submitted a license amendment request (LAR) to add a permanent exception to River Bend Station, Unit 1 (RBS) Technical Requirements Manual (TRM) section 3.9.14, "Crane Travel - Spent and New Fuel Storage, Transfer, and Upper Containment Fuel Pools," to allow for movement of fuel pool gates over fuel assemblies for maintenance. This exception will also be described by revision to Updated Safety Analysis Report (USAR) section 9.1.2.2.2, "Fuel Building Fuel Storage," and section 9.1.2.3.3, "Protection Features of Spent Fuel. The US Nuclear Regulatory Commission (NRC) staff has reviewed the Entergy submittals, regarding changes to the [TRM and UFSAR](#) and has determined that the following additional information is required to complete its review of the amendment request:

Request for Additional Information (RAI)-1

In your application dated July 29, 2013 (ADAMS Accession No. ML13214A334), it states:

The proposed changes add an exception to the movement of loads over the spent fuel pool. The exception is necessary to allow for movement of the spent fuel pool gates, which weigh more than the currently analyzed load over the spent fuel pool, for gate repair or replacement. The current NRC approved fuel handling accident (FHA) for River Bend station unit 1 accounts for 150 damaged fuel rods from a drop of a channeled spent fuel bundle onto unchanneled spent fuel in the spent fuel racks in the fuel building and includes a decay time of 24 hours. The FHA does not reflect dropping of a heavy load, such as the spent fuel pool gates, onto unchanneled spent fuel in the spent fuel racks in the fuel building.

Entergy is proposing to add a permanent exception to RBS TRM Section 3.9.14, "Crane Travel – Spent and New Fuel Storage, Transfer, and Upper Containment Fuel Pools," to allow for movement of fuel pool gates over fuel assemblies for maintenance. The exception will also be described by revision to UFSAR section 9.1.2.2.2, "Fuel Building Fuel Storage," and section 9.1.2.3.3, "Protection Features of Spent Fuel Storage Facilities." However, the proposed changes to the TRM 3.9.14 and UFSAR sections 9.1.2.2.2 and 9.1.2.3.3 do not reflect that the movement of the spent fuel pool gates is restricted to repair or replacement activities and therefore, would allow movement of the spent fuel pool gates at any time. This contradicts the application statements that say that this amendment is for spent fuel pool gate repair or replacement. Explain if Entergy is requesting to move the spent fuel pool gates at any time or only for repair and replacement. If the spent fuel pool gates are going to be moved only for repair and replacement then provide the updated TRM and UFSAR sections that reflect this change, similar to those in Amendment Number 108 to RBS 1 Facility Operating License Number NPF-47 (ADAMS Accession Number ML003674610).

RAI-2

NUREG-0800, Standard Review Plan 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," dated July 2000 (ADAMS Accession Number ML003734190), states, in part that: The models, assumptions, and parameter inputs used by the licensee should be reviewed to ensure that the conservative design basis assumptions outlined in RG-1.183 have been incorporated.

Appendix B of Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ADAMS Accession Number ML003716792), Regulatory Position 1.1 states, in part that: "The number of fuel rods damaged during the accident should be based on a conservative analysis that considers the most limiting case."

Entergy's letter dated September 23, 2014, (ADAMS Accession Number ML14272A185) to the NRC states:

As movement of the gates for the purposes of replacing the seals is typically scheduled to be performed during power operations, the dose analysis is based upon the assumption that the fuel impacted in the spent fuel pool has been subcritical for a minimum of 14 days (336 hours), which represents the minimum realistic refueling outage duration.

After reviewing the information submitted by Entergy, the NRC staff notes that the licensee has not provided an analysis that will provide the NRC Staff reasonable assurance that the FHA doses remain within regulatory limits (if a heavy load is moved over the spent fuel pool). The current FHA analysis accounts for 150 damaged fuel rods from a drop of a channeled spent fuel bundle onto unchanneled spent fuel in the spent fuel racks and includes a decay time of 24 hours. The load drop calculation for spent fuel pool gates predicts 266 damaged fuel rods and has a minimum of 14 days (336 hours) decay time. However, the requirement for a minimum of 14 days for decay prior to movement of the spent fuel pool gate has not been included in the RBS Facility Operating License. Therefore, since the RBS facility operating license does not place a restriction on moving heavy loads, or the minimum amount of decay time for heavy load movement, nor does it account for heavy loads in the current FHA, the NRC staff can not conclude that there is reasonable assurance of adequate protection and that the requested LAR does not create the possibility of a new or different kind of accident from those previously analyzed. Provide a revised FHA that accounts for 266 damaged fuel rods with a decay time of 24 hours for NRC staff review, or provide a facility operating license restriction that ensures that spent fuel pool fuel assembly decay time of 14 days (336 hours) before a heavy load is allowed to be moved over the spent fuel pool.

This request was discussed with Mr. [Danny Williamson](#) of your staff on [December 16](#), 2014, and it was agreed that a response would be provided within 30 days from the issuance of this email. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

Alan B. Wang

Project Manager (River Bend Station)

Nuclear Regulatory Commission

Division of Operating Reactor Licensing

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