

January 19, 1996

MEMORANDUM TO: William H. Bateman, Director
 Project Directorate IV-2
 Division of Reactor Projects III/IV

FROM: Conrad E. McCracken, Chief
 Plant Systems Branch
 Division of Systems Safety and Analysis

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) RELATED TO
 AN AMENDMENT REQUEST FOR THE CALLAWAY PLANT
 (TAC NO. M93704)

Plant Name: Callaway Plant
 Licensee: Union Electric Company
 Review Status: Incomplete

Members of the Plant Systems Branch (SPLB) have reviewed the submittal of Sept. 6, 1995 in which the Union Electric Co. (UEC) requested permission to increase the fuel enrichment at the Callaway Plant from 4.45 to 5.00 w/% U-235 for fuel with integral fuel burnable absorbers (IFBAs) and from 3.85 to 4.10 w/% U-235 for fuel without IFBAs. However, the submittal did not discuss thermal/hydraulic (T/H) considerations relative to the spent fuel pool (SFP) and this information must be provided to support the staff's review. In particular, information is needed that demonstrates that the T/H characteristics of the SFP are in conformance with previously accepted criteria or with present NRC guidelines for the fuel enrichment changes that are proposed in the submittal. The review of the licensee's request will be continued after receipt of the licensee's response to the request for additional information (attached).

CONTACT: Norman Wagner, NRR/DSSA/SPLB
 415-2808

Docket No.: 50-483

Attachment: As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 19, 1996

MEMORANDUM TO: William H. Bateman, Director
Project Directorate IV-
Division of Reactor Projects III/IV

FROM: Conrad E. McCracken, Chief *C. McCracken*
Plant Systems Branch
Division of Systems Safety and Analysis

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) RELATED TO
AN AMENDMENT REQUEST FOR THE CALLAWAY PLANT
(TAC NO. M93704)

Plant Name: Callaway Plant
Licensee: Union Electric Company
Review Status: Incomplete

Members of the Plant Systems Branch (SPLB) have reviewed the submittal of Sept. 6, 1995 in which the Union Electric Co. (UEC) requested permission to increase the fuel enrichment at the Callaway Plant from 4.45 to 5.00 w/% U-235 for fuel with integral fuel burnable absorbers (IFBAs) and from 3.85 to 4.10 w/% U-235 for fuel without IFBAs. However, the submittal did not discuss thermal/hydraulic (T/H) considerations relative to the spent fuel pool (SFP) and this information must be provided to support the staff's review. In particular, information is needed that demonstrates that the T/H characteristics of the SFP are in conformance with previously accepted criteria or with present NRC guidelines for the fuel enrichment changes that are proposed in the submittal. The review of the licensee's request will be continued after receipt of the licensee's response to the request for additional information (attached).

CONTACT: Norman Wagner, NRR/DSSA/SPLB
415-2808

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Attachment: As stated

REQUEST FOR ADDITIONAL INFORMATION
CALLAWAY PLANT
(TAC NO. M93704)

In support of the Union Electric Company's amendment request of September 6, 1995, information is required that demonstrates that the thermal-hydraulic characteristics of the Callaway Spent Fuel Pool (SFP) are in conformance with previously accepted criteria or with present NRC guidelines for the fuel enrichment changes that have been requested. Therefore, the following information is requested:

1. Describe the licensing bases for the Callaway SFP and related systems, making reference to licensing documents and correspondence as applicable, and explain what impact the proposed changes in fuel enrichment will have on these licensing bases. Identify any relevant assumptions and other licensing basis considerations such as postulated accident conditions, single-failure considerations, and environmental effects on equipment in the vicinity of the SFP.
2. If not included in the response to 1 (above), provide the following information:
 - a. The worst-case decay heat load that will result from spent fuel stored in the SFP as a consequence of a normal core offload and a full core offload. For each, specify the bases for the results obtained, including the number and types of spent fuel elements stored.
 - b. The worst-case bulk temperatures of the SFP coolant and the bases for these temperatures for a normal core offload and for a full core offload.
 - c. The minimum time to reach bulk boiling in the SFP coolant after reaching the worst-case temperatures in the case of a normal core offload and a full core offload.
 - d. The maximum (worst-case) fuel cladding temperature that could be reached for fuel stored in the SFP.
3. Discuss to what extent coolant boiling may result from storage of spent fuel in the SFP and to what degree voids resulting from such boiling have been included in the criticality analysis for the proposed changes in fuel enrichment.
4. Explain what is meant by "thermal hydraulic constraints" and their resolution (see pages 1 and 2 of Attachment 3 to the September 6, 1995 submittal).
5. Describe how the fuel pool cleanup system will be protected in the event of high SFP coolant temperatures.