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To: "Joseph Sebrosky" <JMS3@nrc.gov>
Date: 10/24/05 11:38AM
Subject: Draft Supplement

REFERENCES: (a) Letter from G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated May 16, 2005, License Amendment Request: Change to the Dry Shielded Canister Design Basis Limit Requiring NRC Prior Approval Pursuant to 10 CFR 72.48 to Support the ISFSI NUHOMS*-32P Upgrade
(b) Letter from Mr. J. E. Pollock (CCNPP) to Document Control Desk (NRC), dated September 29, 2005, Response to Request for Additional Information Regarding License Amendment Request for Change to the Dry Shielded Canister Design Basis Limit

By letter dated May 16, 2005 (Reference a), we submitted a license amendment request to incorporate changes to our licensing basis that require Nuclear Regulatory Commission (NRC) prior approval per 10 CFR 72.48. In that request, we informed you that the 72.48 evaluation we performed in support of the ISFSI NUHOMS*-32P upgrade identified two changes which require NRC prior approval. The changes involve a new evaluation methodology for the criticality analysis [72.48(c)(2)(viii)], and alteration of a design basis limit for a fission product barrier due to internal design pressure increase from 50 psig to 100 psig [72.48(c)(2)(vii)]. While we provided the justification for the internal design pressure increase in Reference (a), we took credit for a previously submitted license amendment request, for a change in methodology for criticality analysis. The purpose of this supplement is to forward additional related changes that require NRC prior approval per 10 CFR 72.48.

As a result of our response to your additional request for information (RAI), regarding our May 16, 2005, application (Reference b) and the recently completed NRC inspection of our 72.48 evaluation, we have revised the 72.48 evaluation. In the revised 72.48 evaluation, we have identified two more changes that require NRC prior approval. The first change involves alteration of a design basis limit for a fission product barrier due to change in weld stress allowable from Level C for 24P canisters to Level D for 32P canisters (see response to Requested Information 2 in Reference b). The second change identified that require NRC prior approval is the change in methodology for the structural evaluation of the dry shielded canister (DSC). The methodology employed for the 32P analysis in References (a) and (b) uses elastic/plastic material behavior for the DSC shell, where as, the 24P analysis assumed elastic material behavior. Although, the 24P analysis did use elastic/plastic material behavior for the basket material, which is a plate structure, NRC prior approval of this methodology for a shell material is still required. The justification for both these changes are contained in References (a) and (b).

In addition, as a result of the 72.48 inspection findings, we have redone the thermal analysis using a finite element model with a 14x14 uniform transverse mesh for each homogenized fuel assembly. The new thermal analysis has revised some of the information we reported in References (a) and (b). The two items that are of importance to the structural analysis are the slight increases in internal DSC storage accident pressure and temperature of the basket material at which structural properties were taken for transfer condition. The accident storage pressure increased by 0.9 psig from 98.5 to 99.4 psig, still within the 100 psig design limit. The Aluminum Basket Plates temperature increased by 2°F from 725°F to 727°F. Since the maximum stress in the basket does not occur in the high temperature region, this increase does not affect the results of the structural analysis.

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