



**Constellation Energy**

October 28, 2005

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ATTENTION:** Document Control Desk

**SUBJECT:** Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318  
Independent Spent Fuel Storage Installation; Docket No. 72-8  
Supplement to 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

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**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 10 CFR 72.48 evaluation we performed in support of the Independent Spent Fuel Storage Installation NUHOMS®-32P upgrade identified two changes which require NRC prior approval. The changes involve a new evaluation methodology for the criticality analysis [10 CFR 72.48(c)(2)(viii)], and alteration of a design basis limit for a fission product barrier due to an internal design pressure increase from 50 psig to 100 psig [10 CFR 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 the change in methodology for the criticality analysis. The primary 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 request for additional information regarding our May 16, 2005, application (Reference b) and the recently completed NRC inspection of our 10 CFR 72.48 evaluation, we have revised the 10 CFR 72.48 evaluation. In the revised 10 CFR 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 a change in the allowable weld stress 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 requires NRC prior approval is the change in methodology for the structural

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SISP review complete OK for public release

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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, whereas 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 of these changes is contained in References (a) and (b).

In addition, please be informed that as a result of the 10 CFR 72.48 inspection, we have reanalyzed the thermal performance of the 32P canister 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 items that are of importance to the structural analysis are the slight increases in internal DSC storage accident pressure and temperature, and the temperature of the basket material at which structural properties were taken for the transfer condition. The accident storage gas temperature increased by 10°F from 725°F to 735°F and the pressure increased by 0.9 psi from 98.5 to 99.4 psig, still within the 100 psig design limit. The Aluminum Basket Plates' temperature in the center region increased by 10°F from 717°F to 727°F and in the periphery it increased by 4°F from 573°F to 577°F. The structural analysis uses a uniform temperature of 725°F for the entire basket. 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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Should you have questions regarding this matter, please contact Mr. L. S. Larragoite at (410) 495-4922.

Very truly yours,

*Joseph E. Pollock*

STATE OF MARYLAND :  
: TO WIT:  
COUNTY OF CALVERT :

I, Joseph E. Pollock, being duly sworn, state that I am Plant General Manager - Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this License Amendment Request on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

*Joseph E. Pollock*

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 28 day of October, 2005.

 WITNESS my Hand and Notarial Seal:

My Commission Expires: **Wendy L. Hunter**  
NOTARY PUBLIC  
Calvert County, Maryland  
JEP/GT/bjd My Commission Expires 01/01/06

*Wendy L. Hunter*  
Notary Public  
10/28/05  
Date

cc: J. M. Sebrosky, NRC  
P. D. Milano, NRC  
S. J. Collins, NRC

Resident Inspector, NRC  
R. I. McLean, DNR