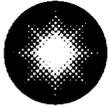


Charles H. Cruse
Vice President
Nuclear Energy

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410 495-4455



**Constellation
Nuclear**

**Calvert Cliffs
Nuclear Power Plant**

*A Member of the
Constellation Energy Group*

December 21, 2000

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 2; Docket No. 50-318
Lead Fuel Assembly – Temporary Exemption Request and License Amendment
Request Supplement

REFERENCES:

- (a) Letter from Mr. C. H. Cruse (CCNPP) to NRC Document Control Desk, dated September, 14, 2000, Lead Fuel Assembly – Temporary Exemption Request and License Amendment Request
- (b) Telephone Conference between Ms. D. J. Moeller, et al. (CCNPP) and Mr. A. W. Dromerick, et al. (NRC), dated November 20, 2000, same subject

In Reference (a) we requested a Temporary Exemption and a License Amendment Request to allow a lead fuel assembly with a limited number of fuel rods clad with advanced zirconium-based alloys to be inserted into the Unit 2 Core during the next refueling outage. Attachment (1) to this letter contains the information we agreed to provide you during Reference (b).

A001

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



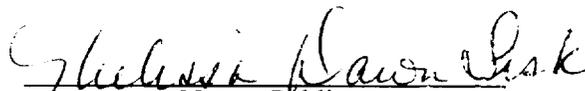
STATE OF MARYLAND :
: TO WIT:
COUNTY OF CALVERT :

I, Charles H. Cruse, being duly sworn, state that I am Vice President, Nuclear Energy, 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.



Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 21st day of December, 2000.

WITNESS my Hand and Notarial Seal:



MEISSA DAWN DISK
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires November 1, 2003

My Commission Expires: 11-01-03

12/21/00

Date

CHC/DJM/bjd

Attachment: (1) Supplement Information for the Lead Fuel Assembly Temporary Exemption Request and License Amendment Request

cc: R. S. Fleishman, Esquire
J. E. Silberg, Esquire
Director, Project Directorate I-1, NRC
A. W. Dromerick, NRC

H. J. Miller, NRC
Resident Inspector, NRC
R. I. McLean, DNR

ATTACHMENT (1)

**SUPPLEMENT INFORMATION FOR
THE LEAD FUEL ASSEMBLY
TEMPORARY EXEMPTION REQUEST AND
LICENSE AMENDMENT REQUEST**

ATTACHMENT (1)

SUPPLEMENT INFORMATION FOR THE LEAD FUEL ASSEMBLY TEMPORARY EXEMPTION REQUEST AND LICENSE AMENDMENT REQUEST

During a telephone conference with the Nuclear Regulatory Commission (NRC) staff, it was requested that we provide information concerning the Lead Fuel Assembly (LFA) program at Calvert Cliffs Nuclear Power Plant. Specifically, we were asked to state why it would be necessary and useful to insert the LFA into the Unit 2 Core during the next refueling outage.

Most of the fuel failures at Calvert Cliffs Nuclear Power Plant are caused by grid-to-rod fretting. We have determined that grid-to-rod fretting failures normally occur in low duty third-cycle fuel assemblies located near the shroud. The LFA (1RT4) that we plan to insert into the Unit 2 Cycle 14 Core was designed with Turbo Grid Cages (I-Springs). We believe that the I-Spring design will reduce third-cycle grid-to-rod fretting. We plan to validate this belief with LFA 1RT4. A core shroud location (full core location 52) has been selected for LFA 1RT4 for its third-cycle of irradiation. We will perform cladding wear measurements after Unit 2 Cycle 14 to evaluate the I-Spring performance.

In addition to evaluating the performance of the I-Spring design, we plan to continue our evaluation of the corrosion performance of the advanced claddings, Alloy E and Zr-4 + Fe, at higher burnups for low duty fuel. Lead Fuel Assembly 1RT4 contains both the I-Spring design and the advanced cladding, which will allow us to meet both objectives. We plan to perform oxide measurements in both advanced claddings after Unit 2 Cycle 14 is completed.

The LFA will be placed in a non-limiting core location. We have determined that the existing plant analysis will not be affected by inserting this LFA into the Unit 2 Cycle 14 Core.

In addition, after reviewing the Determination of Significant Hazards provided in our September 14, 2000 letter, we have determined we should provide additional information for our response to Questions 1 and 3. The following is supplemental information to our responses to these Significant Hazards Questions.

Question 1.

Supporting analyses indicate that since the LFA will be placed in a non-limiting location, the placement scheme and the similarity of the advanced alloys to zircaloy-4 will assure that the behavior of the fuel rods with these alloys are bounded by the fuel performance and safety analyses performed for the zircaloy-4 clad fuel rods currently in the Unit 2 Core. Therefore, the addition of these advanced claddings does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Question 3.

Supporting analyses indicate that since the LFA will be placed in a non-limiting location, the placement scheme and the similarity of the advanced alloys to zircaloy-4 will assure that the behavior of the fuel rods with these alloys are bounded by the fuel performance and safety analyses performed for the zircaloy-4 clad fuel rods currently in the Unit 2 core. Therefore, the addition of these advanced claddings does not involve a significant reduction in the margin of safety.