July 24, 2001

Mr. Charles H. Cruse
Vice President - Nuclear Energy
Calvert Cliffs Nuclear Power Plant, Inc.
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - REVIEW OF UPDATED FINAL SAFETY ANALYSIS REPORT, REV. 27 (TAC NOS. MB0386 AND MB0387)

Dear Mr. Cruse:

By letter dated October 24, 2000, Calvert Cliffs Nuclear Power Plant, Inc. submitted Revision 27 to the Calvert Cliffs Nuclear Power Plant Updated Final Safety Analysis Report (UFSAR). The NRC staff determined that two changes included in this revision needed further review: discussions related to license renewal and fuel assembly design.

License Renewal

Revision 27 contains a new Chapter 16 describing aging management programs and commitments required to be incorporated into the UFSAR in accordance with License Condition 2.F of the Calvert Cliffs renewed operating licenses. License Condition 2.F states that the next update of the UFSAR shall incorporate the UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as amended and supplemented by the program descriptions contained in Appendix E to the Safety Evaluation Report Related to the License Renewal of Calvert Cliffs Nuclear Power Plant, Units 1 and 2, NUREG-1705. The list in Appendix E of the descriptions to be incorporated into the UFSAR was based on information provided in your letter dated December 6, 1999.

The staff found that 30 of the items listed in Appendix E were not incorporated into Revision 27 of the UFSAR. We discussed these items with your staff in a telephone call on November 20, 2000. Supplemental information was provided by your staff on November 28, 2000. Your staff stated that industry guidance contained in Nuclear Energy Institute (NEI) 98-03, “Guidelines for Updating Final Safety Analysis Reports,” was used as the basis for not incorporating a number of the items. NEI 98-03 provides guidance for complying with the requirements of 10 CFR 50.71(e) to periodically update the UFSAR to incorporate changes and certain new information since the last UFSAR update. However, NEI 98-03 is not appropriate for deciding what information should be incorporated into the UFSAR when required by a license condition.

In reviewing the supplemental information provided by your staff and the NRC staff's bases for granting the renewed licenses, we agree that, although your December 6, 1999, letter proposed including these items in the UFSAR, these items did not need to be incorporated into the UFSAR for license renewal. These specific items were either not relied upon by the staff in making its reasonable assurance finding in accordance with 10 CFR 54.29 for issuing the renewed license, or involve commitments to complete an action that are already addressed by License Condition 2.G. In addition, License Condition 2.F provided for changes to programs described in Appendix E without prior NRC approval, pursuant to the requirements contained in 10 CFR 50.59. The enclosure to this letter provides a discussion of the staff's evaluation for each of these items.

Accordingly, the staff concludes that Revision 27 of the Calvert Cliffs UFSAR appropriately incorporates a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses. The staff may verify that appropriate records are maintained at the plant supporting your basis for excluding the items described in the enclosure.

Fuel Assembly Design

UFSAR Section 3.2.3.5, "Fuel Assembly Design Limits" was modified by Revision 27 to include the following statement:

> "A limited amount of blistering and spallation of the oxide layer is acceptable as long as 1 percent strain capability is perserved."

The staff has determined that this addition is not acceptable. We are aware that the Calvert Cliffs fuel has experienced some blistering and pre-spallation in recent cycles due to high duty and the use of Optin cladding. We have met with your staff and have concluded that the actions taken to address this condition are appropriate and acceptable. We are also aware that the situation should improve following replacement of the steam generators due to the increased flow through the core. In addition, it is our understanding that the Optin cladding will be replaced with Zirlo cladding, which is less susceptible to the problem, after Zirlo cladding is approved for use in Combustion Engineering reactors.

The staff does not consider operation of a reactor with blistering and spalled fuel "normal." Although a certain amount of fuel damage during normal operation is allowed for, and controlled through Technical Specification limits on coolant activity, the staff does not endorse or encourage routine operation with damaged fuel, as may be inferred through the inclusion of

this statement in the UFSAR. Based on a telephone conference with your staff on June 29, 2001, it is our understanding that this statement will be removed in a future update of the UFSAR.

Sincerely,

**/RA/**

Donna Skay, Project Manager, Section 1
Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-317, 50-318

Enclosure: As stated

cc w/encl: See next page

this statement in the UFSAR. Based on a telephone conference with your staff on June 29, 2001, it is our understanding that this statement will be removed in a future update of the UFSAR.

Sincerely,

**/RA/**

Donna Skay, Project Manager, Section 1
Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-317, 50-318

Enclosure: As stated

cc w/encl: See next page

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**Evaluation of Appendix E Items not Included in the Calvert Cliffs Updated Final Safety Analysis Report (UFSAR)**

Aging Management Programs

Table 1 lists 26 programs contained in Appendix E to the Safety Evaluation Report (SER) Related to the License Renewal of Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 NUREG-1705, that were not incorporated into the UFSAR. These items relate to aging management programs for valve internals, stainless steel wire ropes, chains, damper seals, and fans. As documented in Section 3 of the SER, these components perform their intended function with moving parts or with a change in configuration or properties and are not subject to an aging management review pursuant to 10 CFR 54.21(a)(1)(i). In a letter dated November 12, 1998, the licensee stated that, although not required by the license renewal rule, an aging management review was performed for these components for its own benefit. The licensee inadvertently included these components and their associated aging management programs in the proposed list of items to be included in the UFSAR submitted by its December 6, 1999, letters and the staff subsequently included them in the Appendix E list.

Because these aging management programs involve intended functions performed by moving parts, they do not require aging management review and are not within the scope of license renewal as documented in Section 3 of the SER. Therefore, these items need not be included in the UFSAR for license renewal.

Commitments

Table 2 lists 4 commitments contained in Appendix E that were not incorporated into the UFSAR. The licensee inadvertently included these commitments in the proposed list of items to be included in the UFSAR submitted by its December 6, 1999, letters and the staff subsequently included them in the Appendix E list.

Items 26, 78, and 82 require actions to be completed by July 31, 2014, for Unit 1, and August 13, 2016, for Unit 2. These commitments are consistent with the requirement in License Condition 2.G in the Calvert Cliffs, Units 1 and 2, renewed operating licenses for completing future actions listed in Appendix E. Therefore, License Condition 2.G should ensure that the commitments are implemented by the stated dates and the commitments need not be incorporated into the UFSAR.

Item 55 relates to managing aging effects associated with stress corrosion cracking (SCC) of the reactor vessel head closure seal leakage detection line. During the initial review of the renewal application, the staff believed that an aging management program was required for this line because of the potential for the line to refill if the reactor vessel seal leaks and the safety consequences of a leak of reactor coolant. In a letter dated October 22, 1999, the licensee provided additional information concerning this line stating that each line has an orifice in the vessel flange that limits flow rate from a break in the line to less than the normal reactor coolant system makeup capacity. These lines were removed from the scope of license renewal rule and an aging management program was no longer required. Therefore, this item need not be included in the UFSAR.

Enclosure

| Item # | Components |
|---|---|
| **Table 1: 26 Programs in Appendix E not Included in Calvert Cliffs Updated FSAR** | |
| 10 | Stainless steel wire rope |
| 14 | Stainless steel and carbon steel wire rope and carbon steel chains |
| 108 | Check Valves (CKVs) and Control Valves (Cvs) |
| 118 | Cvs |
| 123 | CKV |
| 124 | Containment Isolation Valves (CIVs) of the Plant Air Subsystem |
| 125 | CKVs, Motor-Operated Valves (MOVs) |
| 129 | CKVs, Relief Valves (RVs), Hand Valves (Hvs) |
| 131 | CIVs exposed to well water |
| 132 | CIVs |
| 133 | CIVs exposed to treated water or gaseous waste |
| 1073 | Damper seals |
| 175 | Damper seals |
| 181 | Hvs |
| 182 | Damper seals |
| 183 | CIVs |
| 184 | CKVs, CVs, MOVs |
| 193 | Damper seals |
| 196 | Damper seals |
| 211 | CKVs in the gas return line to containment from the Post Accident Sampling System |
| 215 | CVs in the RCS hot leg sampling lines |
| 216 | Containment isolation solenoid valves (SVs) in the sample return lines from the reactor coolant sample hoods to the reactor coolant drain tank (TK) |
| 221 | Cvs |
| 229 | SDC header return isolation MOV outside containment and the SI leakoff return isolation HV |
| 230 | Loop inlet CKVs, SI header CKVs, and the SIT outlet CKVs. |
| 258 | Containment isolation HVs |
| **Table 2: 4 Commitments in Appendix E not Included in Calvert Cliffs Updated FSAR** | |
| 26 | Dome |
| 55 | Piping |
| 78 | Control Element Assembly Shroud and Bolts (shroud bolts only) |
| 82 | Applicable Components of Reactor Vessel Internals |

Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 and 2

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