



1650 CALVERT CLIFFS PARKWAY • LUSBY, MARYLAND 20657-4702

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VICE PRESIDENT  
NUCLEAR ENERGY  
202-460-4455

September 17, 1993

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  
License Amendment Request; Core Operating Limits Report

Pursuant to 10 CFR 50.90, the Baltimore Gas and Electric Company (BG&E) hereby requests an Amendment to Operating License Nos. DPR-53 and DPR-69 by the incorporation of the changes described below into the Technical Specifications for Calvert Cliffs Unit Nos. 1 and 2.

#### DESCRIPTION

Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," recommended the removal of cycle specific values from the Technical Specifications to a separate document which could be revised by the licensee as long as previously approved methodologies are used. The proposed amendment would implement this recommendation and, in addition, remove out-dated references to power operation with less than four reactor coolant pumps in operation, and make minor clarifications to the technical specifications. Unless specifically noted, all the requested changes are consistent with NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants."

#### BACKGROUND

The Calvert Cliffs Units 1 and 2 Technical Specifications contain several limits which are a function of the core design. As each reload core is designed some physics parameters are typically changed to reflect the new core design. This requires a technical specification change prior to use of the new reload core. Since initial startup, Calvert Cliffs has applied for 17 license amendments and written over 100 letters to the NRC to support reload cores.

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Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," recommended that those Technical Specification limits which are cycle-specific be relocated to a new document, the Core Operating Limit Report (COLR). This document can be revised by the licensee without NRC approval as long as previously approved methodologies are used. A new administrative technical specification requires that each revision to the COLR be submitted to the NRC for information. The technical specification also lists Topical Reports and letters describing the approved methodologies. Any change to those methodologies must receive prior approval by the NRC.

This license amendment request implements the generic letter line item improvement. Specific changes are described below under "Requested Changes."

During the original design of Calvert Cliffs (and many other pressurized water reactors), it was envisioned that power operation would be allowed at reduced power levels with a reduced number of reactor coolant pumps or steam generators. Many of the Calvert Cliffs technical specifications contain references to "less than four pump" operation. This design feature was never implemented. Technical Specification 3.4.1.1 requires that all reactor coolant pumps be used during power operation. In addition, Unit 2 license condition 2.C.5 prohibits power operation with less than four pumps in operation. BG&E does not intend to pursue power operation with less than four pumps in the future. Therefore, the technical specification references to less than four pump operation can never be used and clutter and confuse the technical specification. This amendment removes these useless references to power operation with less than four pumps.

During the preparation of this amendment, the need for minor clarifications to Section 3/4.1, "Reactivity Control Systems," and 3/4.2, "Power Distribution Limits," specifications was recognized. The majority of these changes involved the consistent use of footnotes. Some footnotes were incorporated into the body of the specification or moved to the BASES. Also, the specifications regarding the monitoring of linear heat rate using the excore detectors was found to be unnecessarily confusing and repetitive. These specifications were revised but no requirements were deleted or added. Detailed information on these changes is located in Attachment 1.

#### REQUESTED CHANGE

Attachment 1 details the requested changes to the technical specifications. Attachments 2 and 3 contain marked-up technical specification pages for Units 1 and 2, respectively. Attachments 4 and 5 contain Core Operating Limits Reports for Unit 1, Cycle 11 and Unit 2, Cycle 10.

#### SAFETY ANALYSIS

The cycle-specific limits in the Technical Specifications reflect the initial condition assumptions used in the plant's safety analyses. Adherence to the initial conditions is necessary to ensure that the consequences of the analyzed accidents are acceptable. This amendment does not eliminate any technical specification limits; however, relocation of the specific limit values from the technical specifications to the COLR eliminates the need for prior NRC approval when these values are changed. This lack of prior approval is not safety significant, however, because the values may only be changed using methodologies which have received prior approval by the NRC. Any change in methodology must receive prior approval by the NRC. Therefore, the margin of safety provided by the limits assumed in the safety analysis are still protected by the Technical Specifications.

The elimination of provisions in the technical specifications for power operation with less than four reactor coolant pumps in operation has no impact on plant operation or safety. Such operation is currently prohibited by the technical specifications and, for Unit 2, by the Facility Operating License.

Several clarifying changes have been proposed. These changes neither delete nor add any requirements but simply improve the readability of the specifications. These clarifications have no impact on plant safety.

#### DETERMINATION OF SIGNIFICANT HAZARDS

The proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to not involve a significant hazards consideration, in that operation of the facility in accordance with the proposed amendments:

1. *Would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The relocation of cycle-specific operating limits to a licensee-controlled report has no effect on the probability or consequences of any previously evaluated accident. The cycle-specific operating limits, although not in the Technical Specifications, will still be observed. The proposed amendment does not change the actions to be taken should those limits be exceeded.

Each accident analysis contained in the Updated Final Safety Analysis Report (UFSAR) will be evaluated for each reload cycle using NRC-approved reload design methodologies. Cycle-specific limits, to be located in the Core Operating Limits Report (COLR), will be generated to ensure that the results of the accident analyses are bounded by results previously approved by the NRC.

The elimination of technical specification provisions for power operation with less than four reactor coolant pumps in operation has no effect on the probability or consequences of an accident previously evaluated because such operation is currently prohibited by the technical specifications.

The minor clarifications proposed neither add new requirements nor delete existing requirements but simply improve the readability of the existing specifications. Therefore, the probability or consequences of any accident previously evaluated is not affected.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Would not create the possibility of a new or different type of accident from any accident previously evaluated.*

The relocation of cycle-specific operating limits to a licensee-controlled report does not create the possibility of a new or different accident from any accident previously evaluated. The proposed change does not represent a change in the configuration or operation of the plant and the initial conditions assumed in the analysis of accidents in the UFSAR will continue to be valid.

The elimination of technical specification provisions for power operation with less than four reactor coolant pumps in operation does not create the possibility of a new or different type of accident from any accident previously evaluated. Such operation is currently prohibited by the technical specifications. Therefore, the proposed change does not represent a change in the configuration or operation of the plant.

The minor clarifications proposed neither add new requirements nor delete existing requirements but simply improve the readability of the existing specifications. The proposed change does not represent a change in the configuration or operation of the plant.

Therefore, the proposed change does not create the possibility of a new or different type of accident from any accident previously evaluated.

3. *Would not involve a significant reduction in a margin of safety.*

The cycle-specific limits will continue to be determined using methodologies previously approved by the NRC. The relocation of those limits into the Core Operating Limits Report has no effect on the margin of safety because the limits will be set to protect that margin afforded by previously approved methodologies. Any use of new methodologies must receive prior approval by the NRC. Therefore, the relocation of the cycle-specific limits would not involve a significant reduction in a margin of safety.

The elimination of technical specification provisions for power operation with less than four reactor coolant pumps in operation does not reduce the margin of safety. Such operation is currently prohibited by the technical specifications.

The minor clarifications proposed neither add new requirements nor delete existing requirements but simply improve the readability of the existing specifications. The proposed change has no effect on the margin of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

#### ENVIRONMENTAL ASSESSMENT

The proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes to an inspection or surveillance requirement. We have determined that the proposed amendment involves no significant hazards consideration, and that operation with the proposed amendment would result in no significant change in the types or significant increases in the amounts of any effluents that may be released offsite, and in no significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10 CFR Part 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed amendment.

### SCHEDULE

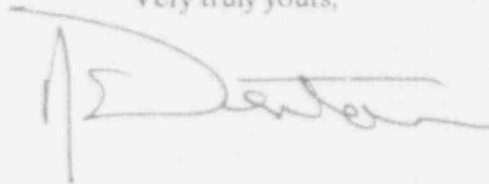
This change is requested to be approved by March 31, 1994. Approval of this change by that date will avoid an additional license amendment request for cycle-specific changes for Unit 1, Cycle 12.

### SAFETY COMMITTEE REVIEW

These proposed changes to the Technical Specifications and our determination of significant hazards have been reviewed by our Plant Operations and Safety Review Committee and Offsite Safety Review Committee. They have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.

Should you have any further 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 hereby certify that on the 17th day of September, 1993, before me, the subscriber, a Notary Public of the State of Maryland in and for Calvert County, personally appeared Robert E. Denton, being duly sworn, and states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the response on behalf of said Corporation.

WITNESS my Hand and Notarial Seal:

  
Notary Public

My Commission Expires:

February 2, 1994  
Date

RED/BDM/bdm/bjd/dlm

- Attachments: (1) Detailed Description of Changes  
(2) Unit 1 Marked-up Technical Specification Pages  
(3) Unit 2 Marked-up Technical Specification Pages  
(4) Core Operating Limits Report - Unit 1, Cycle 11  
(5) Core Operating Limits Report - Unit 2, Cycle 10

cc:       **(With Attachments)**  
          D. G. McDonald, Jr., NRC

**(Without Attachments)**  
D. A. Brune, Esquire  
J. E. Silberg, Esquire  
R. A. Capra, NRC  
T. T. Martin, NRC  
P. R. Wilson, NRC  
R. I. McLean, DNR  
J. H. Walter, PSC

ATTACHMENT (1)

DETAILED DESCRIPTION OF CHANGES

# ATTACHMENT 1

## DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
NOTES:		
1)	Item numbers are found in the left margin of Attachments 2 and 3, Revised Technical Specification Pages for Unit 1 and Unit 2, respectively.	
2)	Unless otherwise noted, the itemized changes apply to both the Unit 1 and Unit 2 revised Technical Specifications pages.	
1	Table of Contents, Page I	Add the entry "Core Operating Limits Report (COLR)" to the Table of Contents for Section 1.0, "Definitions".
2	Table of Contents, Page I	Rename "Unrodded Integrated Radial Peaking Factor" to "Total Integrated Radial Peaking Factor" and "Unrodded Planar Radial Peaking Factor" to "Total Planar Radial Peaking Factor" and relocate in the table. See Items 7 and 8.
3	Table of Contents, Page XVII	Add identification of "COLR" to the Table of Contents for Section 6.9.1, "Routine Reports". See Item 112.
4	Section 1.0, "Definitions", Page 1-1 Unit 1 ONLY	Correct a typographical error in the definition of Axial Shape Index by changing "encore" to "excore". The revised definition is consistent with the Unit 2 definition.
5	Section 1.0, "Definitions", Page 1-3	Add definition of "Core Operating Limits Report (COLR)" to list of definitions. The definition is the same as that used in NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants".
6	Section 1.0, "Definitions", Page 1-3 through 1-8	Renumber definitions in Section 1.0 "Definitions", which follow the inserted definition for the COLR.

# ATTACHMENT 1 (Continued)

## DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
7	Section 1.0, "Definitions", Page 1-7	Rename the Section 1.0, "Definitions", entry "Unrodded Integrated Radial Peaking Factor - $F_r$ " to "Total Integrated Radial Peaking Factor - $F_r^{T1}$ " and alter the definition accordingly. The unrodded peaking factor no longer appears in the Technical Specifications. The total peaking factor is calculated using a full core power distribution monitoring system which accommodates core power tilt. The entry is moved to maintain the alphabetical order of the definitions.
8	Section 1.0, "Definitions", Page 1-8	Rename the Section 1.0, "Definitions", entry "Unrodded Planar Radial Peaking Factor - $F_{xy}$ " to "Total Planar Radial Peaking Factor - $F_{xy}^{T1}$ " and alter the definition accordingly. The unrodded peaking factor no longer appears in the Technical Specifications. The total peaking factor is calculated using a full core power distribution monitoring system which accommodates core power tilt. The entry is moved to maintain the alphabetical order of the definitions.
9	Section 2.1.1, "Reactor Core", Page 2-1	Delete the reference to Figures 2.1-2, 2.1-3, and 2.1-4, "Reactor Core Thermal Margin Safety Limit with less than 4 reactor coolant pumps operating", and delete the reference to power operation with less than 4 reactor coolant pumps operating.
10	Figure 2.1-1, "Reactor Core Thermal Margin Safety Limit - Four Reactor Coolant Pumps Operating", Page 2-2	Delete the portion of title specifying figure applicability during power operation with four reactor coolant pumps in operation. Also delete the word "integrated" from the notes on the figure to make it consistent with the figure referenced in the note.
11	Figure 2.1-2, "Reactor Core Thermal Margin Safety Limit - Three Reactor Coolant Pumps Operating", Page 2-3	Delete the "Reactor Core Thermal Margin Safety Limit" curves for power operation with less than four reactor coolant pumps in operation.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
12	Figure 2.1-3, "Reactor Core Thermal Margin Safety Limit - Two Reactor Coolant Pumps Operating - Same Loop", Page 2-4	Delete the "Reactor Core Thermal Margin Safety Limit" curves for power operation with less than four reactor coolant pumps in operation.
13	Figure 2.1-4, "Reactor Core Thermal Margin Safety Limit - Two Reactor Coolant Pumps Operating - Opposite Loops", Page 2-5	Delete the "Reactor Core Thermal Margin Safety Limit" curves for power operation with less than four reactor coolant pumps in operation.
14	Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits", Page 2-7	Remove references to power operation with less than four reactor coolant pumps in operation.
15	Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits", Page 2-8	Remove references to power operation with less than four reactor coolant pumps in operation.
16	Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits", Page 2-9	Remove reference to relocated Figure 2.2-1, "Peripheral Axial Shape Index vs. Fraction of Rated Thermal Power", and add a reference to the COLR.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
17	Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits", Page 2-9	Remove references to Figures 2.2-2 and 2.2-3, "Thermal Margin / Low Pressure Trip Setpoint Parts 1 and 2", and add references to the COLR.
18	Table Notation for Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits", Page 2-10	Remove the specified value for design reactor coolant flow with 4 pumps operating. Add a reference to the reactor coolant flow given in Specification 3.2.5, "DNB Parameters".
19	Figure 2.2-1, Peripheral Axial Shape Index vs. Fraction of Rated Thermal Power, Page 2-11	Delete the figure from the Technical Specifications and relocate to the COLR.
20	Figure 2.2-2, "Thermal Margin/Low Pressure Trip Setpoint Part 1", Page 2-12	Delete the figure from the Technical Specifications and relocate to the COLR.
21	Figure 2.2-3, "Thermal Margin/Low Pressure Trip Setpoint Part 2", Page 2-13	Delete the figure from the Technical Specifications and relocate to the COLR.
22	BASES 2.1.1, "Reactor Core", Page B 2-1	Delete references to deleted figures 2.1-2, 2.1-3, and 2.1-4, "Reactor Core Thermal Margin Safety Limit with less than 4 reactor coolant pumps in operation" and to power operation with less than four reactor coolant pumps in operation. See Items 11, 12 and 13.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
23	BASES 2.1.1, "Reactor Core", Page B 2-3	Delete references to deleted figures 2.1-2, 2.1-3, and 2.1-4, "Reactor Core Thermal Margin Safety Limit with less than 4 reactor coolant pumps in operation". See Items 11, 12 and 13.
24	BASES 2.2.1, "Reactor Trip Setpoints", Page B 2-4	Remove references to power operation with less than four reactor coolant pumps in operation.
25	BASES 2.2.1, "Reactor Trip Setpoints", Page B 2-5	Remove references to power operation with less than four reactor coolant pumps in operation.
26	BASES 2.2.1, "Reactor Trip Setpoints", Page B 2-6	Remove references to power operation with less than four reactor coolant pumps in operation.
27	Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F", Page 3/4 1-1	Remove references to Figure 3.1.1-1, "Shutdown Margin vs. Time in Cycle", and add references to the COLR. This value has been revised in 13 of the 17 Calvert Cliffs reload license amendments and is, therefore, cycle specific. The NRC approved relocation of this value to the COLR for Palo Verde 1,2 & 3 and for Millstone 2. This value is not relocated to the COLR in NUREG-1432. In NUREG-1432, this specification is only applicable in Modes 3 - 4. The Calvert Cliffs specification is applicable in Modes 1 - 4 which results in its frequent revision.
28	Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F", Page 3/4 1-1	Relabel Special Test Exception footnote from "***" to "*". See Items 29 and 30.

# ATTACHMENT 1 (Continued)

## DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
29	Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F", Page 3/4 1-1	Delete footnote and footnote reference regarding MODE 2 operation and insert footnote text into Surveillance 4.1.1.1.1.b. This change will increase the readability of the Surveillance.
30	Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F", Page 3/4 1-1	Delete the footnote and relocate to the BASES. This is BASES information, not information related to the Action. See Item 97.
31	Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F", Page 3/4 1-2	Delete footnote and footnote reference regarding MODE 2 operation and insert footnote text into Surveillance 4.1.1.1.1.c. This change will increase the readability of the Surveillance.
32	Figure 3.1.1-1, "Shutdown Margin vs. Time in Cycle", Page 3/4 1-3	Delete the figure from the Technical Specifications and relocate to the COLR.
33	Specification 3.1.1.2, Shutdown Margin $\leq$ 200 F, Page 3/4 1-4	Remove the specific shutdown margin requirement and add references to the limit provided in the COLR. See Item 27.
34	Specification 3.1.1.4, "Moderator Temperature Coefficient", Page 3/4 1-7	Remove references to specific MTC limit and add references to the limit provided in the COLR. Change Figure number reference to 3.1.1-1

## ATTACHMENT 1 (Continued)

### DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
35	Specification 3.1.1.4, "Moderator Temperature Coefficient", Page 3/4 1-7	Delete footnote and footnote reference regarding MODE 2 operation and insert footnote text into Applicability section. This change will increase the readability of the specification.
36	Figure 3.1.1-2, "Fraction of Rated Thermal Power vs. Allowable Positive MTC Limit", Page 3/4 1-8	Revise the Figure number from 3.1.1-2 to 3.1.1-1. See Item 32.
37	Specification 3.1.1.5, "Minimum Temperature for Criticality", Page 3/4 1-10	Delete footnote and footnote reference regarding MODE 2 operation and insert the footnote text into the Applicability section. This change will increase the readability of the specification.
38	Specification 3.1.2.2, "Flow Paths - Operating", Page 3/4 1-12	Remove the reference to a specific shutdown margin requirement and insert a reference to Specification 3.1.1.1, "Shutdown Margin - $T_{avg} > 200\text{ F}$ ". Specification 3.1.1.1 references the COLR for the specific shutdown margin requirement.
39	Specification 3.1.2.4, "Charging Pumps - Operating", Page 3/4 1-15	Remove the reference to a specific shutdown margin requirement and insert a reference to Specification 3.1.1.1, "Shutdown Margin - $T_{avg} > 200\text{ F}$ ". Specification 3.1.1.1 references the COLR for the specific shutdown margin requirement.
40	Specification 3.1.2.6, "Boric Acid Pumps - Operating", Page 3/4 1-17	Remove the reference to a specific shutdown margin requirement and insert a reference to Specification 3.1.1.1, "Shutdown Margin - $T_{avg} > 200\text{ F}$ ". Specification 3.1.1.1 references the COLR for the specific shutdown margin requirement.

## ATTACHMENT 1 (Continued)

### DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
41	Specification 3.1.2.9, "Borated Water Sources - Operating", Page 3/4 1-22	Remove the reference to a specific shutdown margin requirement and insert a reference to Specification 3.1.1.1, "Shutdown Margin - Tavg > 200 F". Specification 3.1.1.1 references the COLR for the specific shutdown margin requirement.
42	Specification 3.1.3.1, "Full Length CEA Position", Page 3/4 1-24	Revise the title from "Full Length CEA Position" to "CEA Position". The existing title was appropriate when there were full length and part length CEAs. The proposed title is more clear.
43	Specification 3.1.3.1, "Full Length CEA Position", Page 3/4 1-25	Remove the reference to the Better Axial Shape Selection System (BASSS) and insert the generic title "full core power distribution monitoring system". NRC approval of the full core power distribution monitoring system in use will be located in the list of approved analytical methods in Section 6.9.1.9.
44	Specification 3.1.3.1, "Full Length CEA Position", Page 3/4 1-25	Remove references to relocated Figure 3.1.3-1, "Allowable Time to Realign CEA Versus Initial Total Integrated Radial Peaking Factor", and insert references to the COLR.
45	Specification 3.1.3.1, "Full Length CEA Position", Page 3/4 1-26	Remove reference to relocated Figure 3.1.3-2, "CEA Group Insertion Limits vs. Fraction of Allowable Thermal Power" and insert the figure name and a reference to the COLR.
46	Figure 3.1.3-1, "Allowable Time to Realign CEA vs. Initial Total Integrated Radial Peaking Factor", Page 3/4 1-28	Delete the figure from the Technical Specifications and relocate to the COLR.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
47	Specification 3.1.3.3, "Position Indicator Channels", Page 3/4 1-29	Remove reference to power operation with less than four reactor coolant pumps in operation.
48	Specification 3.1.3.3, "Position Indicator Channels", Page 3/4 1-30	Remove reference to power operation with less than four reactor coolant pumps in operation.
49	Specification 3.1.3.4, "CEA Drop Time", Page 3/4 1-32	Remove reference to power operation with less than four reactor coolant pumps in operation. In addition, Action b is inconsistent with LCO 3.1.3.4.b.
50	Specification 3.1.3.5, "Shutdown CEA Insertion Limit", Page 3/4 1-33	Delete footnote and footnote reference regarding MODE 2 operation and insert footnote text into Applicability section. This change will increase the readability of the specification.
51	Specification 3.1.3.6, "Regulating CEA Insertion Limits", Page 3/4 1-34	Delete reference to relocated Figure 3.1.3-2, "CEA Group Insertion Limits vs. Fraction of Allowable Thermal Power", and insert a reference to the COLR.
52	Specification 3.1.3.6, "Regulating CEA Insertion Limits", Page 3/4 1-34	Delete footnote and footnote reference regarding MODE 2 operation and insert footnote text into Applicability section. This change will increase the readability of the specification.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
53	Figure 3.1.3-2, "CEA Group Insertion Limits vs. Fraction of Allowable Thermal Power", Page 3/4 1-36	Delete the figure from the Technical Specifications and relocate to the COLR.
54	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-1	Delete reference to relocated Figure 3.2.1-1, "Allowable Peak Linear Heat Rate vs. Burnup", and insert a reference to the COLR.
55	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-1	Insert a footnote and footnote reference to Surveillance 4.2.2.1.2.d. See Item 67. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
56	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-2	Remove references to power operation with less than four reactor coolant pumps in operation.
57	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-2	Remove reference to relocated Figure 3.2.1-3, "Total Planar Peaking Factor vs. N". Insert references to the COLR.
58	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-2	Remove reference to relocated Figure 3.2.1-1, "Allowable Linear Heat Rate vs. Time in Cycle". Insert reference to the COLR.
59	Specification 3.2.1, "Linear Heat Rate", Page 3/4 2-2	Remove Incore Detector Monitoring System uncertainty factors and insert a reference to the relocated uncertainty factors in the COLR.

# ATTACHMENT 1 (Continued)

## DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
60	Figure 3.2.1-1, "Allowable Peak Linear Heat Rate vs. Time in Cycle", Page 3/4 2-3	Delete the figure from the Technical Specifications and relocate to the COLR.
61	Figure 3.2.1-2, "Linear Heat Rate Axial Flux Offset Control Limits", Page 3/4 2-4	Delete the figure from the Technical Specifications and relocate to the COLR.
62	Figure 3.2.1-3, "Total Planar Radial Peaking Factor vs. N", Page 3/4 2-5	Delete the figure from the Technical Specifications and relocate to the COLR.
63	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-6	Remove the specific $F_{xy}^T$ limit and add a reference to the limit provided in the COLR. Remove a reference to relocated Figure 3.2.2-1, "Total Planar Radial Peaking Factor vs. Allowable Fraction of Rated Thermal Power", and insert references to the COLR. See Item 70. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
64	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-6	Remove the reference to the Better Axial Shape Selection System (BASSS) and insert the generic title "full core power distribution monitoring system". NRC approval of the full core power distribution monitoring system in use will be located in the list of approved analytical methods in Section 6.9.1.9.
65	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-6	Delete the reference to $F_{xy}$ . $F_{xy}^T$ , not $F_{xy}$ , is measured using the full core power distribution monitoring system. UNIT 2 ONLY - Delete the option to monitor $F_{xy}^T$ with a non-full Core Power Distribution Mapping system. This option is no longer used at Calvert Cliffs.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
66	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-6	Remove the reference to a specific value of Aximuthal Power tilt and insert a reference to Specification 3.2.4, "Azimuthal Power Tilt".
67	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-6	Insert Surveillance 4.2.2.1.2.d which requires measuring $F_{xy}^T$ every 3 days of MODE 1 operation when monitoring linear heat rate using the excore detectors. This surveillance is relocated from 4.2.2.2.2.b. See Item 71.
68	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-7	Remove reference to power operation with less than four reactor coolant pumps in operation. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
69	Specification 3.2.2.1, "Total Planar Radial Peaking Factor", Page 3/4 2-7	UNIT 2 ONLY - Delete the option to monitor $F_{xy}^T$ with a non-full Core Power Distribution Mapping system. This option is no longer used at Calvert Cliffs.
70	Figure 3.2.2-1, "Total Planar Radial Peaking Factor vs. Allowable Fraction of Rated Thermal Power", Page 3/4 2-8	Delete the figure from the Technical Specifications and relocate to the COLR.

## ATTACHMENT 1 (Continued)

### DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
71	Specification 3.2.2.2, "Total Planar Radial Peaking Factor", Page 3/4 2-9	<p>Delete this specification entirely as described below.</p> <p><u>LCO:</u> The LCO states that Figure 3.2.1-3, "Total Planar Peaking Factor vs. N", shall be used when performing Surveillance 4.2.1.3. This is redundant as Surveillance 4.2.1.3 already specifies that Figure 3.2.1-3 is to be used. Under the proposed changes, the COLR shall specify which curves are to be used when monitoring linear heat rate using the Incore or Excore detector systems.</p> <p><u>APPLICABILITY:</u> The Applicability is redundant to Surveillance 4.2.1.3.</p> <p><u>ACTION:</u> Action a states, paraphrasing, that if the value of N being used in Surveillance 4.2.1.3 is not the correct value of N, to use the correct value within 6 hours. This is redundant to Action b. Action b states that if the correct value of N cannot be used, i.e., the value of <math>F_{xy}^T</math> cannot be brought within the limit, to be in Hot Standby in 6 hours. This is redundant to Specification 3.2.2.2, Action b, which requires that if <math>F_{xy}^T</math> cannot be brought within its limit to be in Hot Standby within 6 hours.</p> <p><u>SURVEILLANCE:</u> Surveillance 4.2.2.2.2 is identical to Surveillance 4.2.2.1.2 with the exception of 4.2.2.2.2.b. Surveillance 4.2.2.2.2.b requires measuring <math>F_{xy}^T</math> every 3 days of accumulated MODE 1 operation when measuring linear heat rate using the excore detectors. This Surveillance has been relocated to Surveillance 4.2.2.1.2.d. See Item 67.</p>
72	Specification 3.2.2.2, "Total Planar Radial Peaking Factor", Page 3/4 2-10	Delete Surveillance 4.2.2.2.3 which is identical to Surveillance 4.2.2.1.3 and is redundant.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
73	Specification 3.2.2.2, "Total Planar Radial Peaking Factor", Unit 2 Page 3/4 2-10	UNIT 2 ONLY - Delete the option to monitor $F_{ry}^T$ with a non-full Core Power Distribution Mapping system. This option is no longer used at Calvert Cliffs.
74	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Page 3/4 2-11	Remove the specific $F_r^T$ limit and add a reference to the limit provided in the COLR. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
75	Specification 3.2.3, "Total Integrated Radial Peaking Factor", Page 3/4 2-11	Remove references to relocated Figures 3.2.3-1, "Total Integrated Radial Peaking Factor vs. Allowable Fraction of Rated Thermal Power", and 3.2.3-2, "DNB Axial Flux Offset Control Limits". Also, rewrite Action b.1 and integrate it with the paragraph below Action b.2 to clarify the actions to be taken.
76	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Page 3/4 2-11	Remove the reference to the Better Axial Shape Selection System (BASSS) and insert the generic title "full core power distribution monitoring system". NRC approval of the full core power distribution monitoring system in use will be located in the list of approved analytical methods in Section 6.9.1.9.
77	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Page 3/4 2-11, Unit 1 Pages 3/2 2-11,12, Unit 2	Delete the reference to $F_r$ . $F_r^T$ , not $F_r$ , is measured using the full core power distribution monitoring system. UNIT 2 ONLY - Delete the option to monitor $F_r^T$ with a non-full Core Power Distribution Mapping system. This option is no longer used at Calvert Cliffs.
78	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Unit 1 Page 3/4 2-11, Unit 2 Page 3/4 2-12	Remove the reference to a specific value of Aximuthal Power tilt and insert a reference to Specification 3.2.4, "Azimuthal Power Tilt".

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
79	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Page 3/4 2-12	Remove reference to power operation with less than four reactor coolant pumps in operation. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
80	Specification 3.2.3, "Total Integrated Radial Peaking Factor" Page 3/4 2-12	UNIT 2 ONLY - Delete the option to monitor $F_r^T$ with a non-full Core Power Distribution Mapping system. This option is no longer used at Calvert Cliffs. Remove the unnecessary phrase "full length" before "CEAs" as all CEAs are full length.
81	Figure 3.2.3-1, "Total Integrated Radial Peaking Factor vs. Allowable Fraction of Rated Thermal Power", Page 3/4 2-13	Delete the figure from the Technical Specifications and relocate to the COLR.
82	Figure 3.2.3-2, "DNB Axial Flux Offset Control Limits", Page 3/4 2-14	Delete the figure from the Technical Specifications and relocate to the COLR.
83	Specification 3.2.4, "Aximuthal Power Tilt", Page 3/4 2-15	Remove reference to power operation with less than four reactor coolant pumps in operation.
84	Specification 3.2.5, "DNB Parameters", Page 3/4 2-16	Delete reference to Table 3.2-1 and incorporate the information associated with four pump operation into the specification.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
85	Specification 3.2.5, "DNB Parameters", Page 3/4 2-16	Surveillance 4.2.5.3 is the same as footnote *** in Table 3.2-1 which has been deleted and the information relocated into the LCO. The information in the footnote will be relocated to the COLR.
86	Table 3.2-1, "DNB Parameters", Page 2-17	Delete the table from the Technical Specifications and relocate the information related to four pump operation to the LCO. See Item 84.
87	Specification 3.3.3.2, "Incore Detectors" Page 3/4 3-31	Change references to Unrodded Planar Peaking Factor and Unrodded Integrated Radial Peaking Factor" to "Total Planar Radial Peaking Factor" and "Total Integrated Radial Peaking Factor". See Items 7 and 8.
88	Specification 3.3.3.2, "Incore Detectors" Page 3/4 3-32	Change references to Unrodded Planar Peaking Factor and Unrodded Integrated Radial Peaking Factor" to "Total Planar Radial Peaking Factor" and "Total Integrated Radial Peaking Factor". See Items 7 and 8.
89	Specification 3.3.3.2, "Incore Detectors" Unit 1 Page 3/4 3-33 Unit 2 Page 3/4 3-32	Change references to Unrodded Planar Peaking Factor and Unrodded Integrated Radial Peaking Factor" to "Total Planar Radial Peaking Factor" and "Total Integrated Radial Peaking Factor". See Items 7 and 8.
90	Specification 3.7.1.1, "Safety Valves", Page 3/4 7-1	Remove reference to power operation (e.g., MODES 1 and 2) with less than four reactor coolant pumps in operation.
91	Specification 3.7.1.1, "Safety Valves", Page 3/4 7-1	Delete the reference to the deleted Table 3.7-2, "Maximum Allowable Power Level - High Trip Setpoint with Inoperable Steam Line Safety Valves During Operation with One Steam Generator".

# ATTACHMENT 1 (Continued)

## DETAILED DESCRIPTION OF CHANGES

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
92	Table 3.7-1, "Maximum Allowable Power Level - High Trip Setpoint with Inoperable Steam Line Safety Valves During Operation with Both Steam Generators", Page 3/4 7-3	Delete the portion of the title referring to operation "with Both Steam Generators". This qualifier is unnecessary following the deletion of Table 3.7-2. See Items 91 and 93.
93	Table 3.7-2, "Maximum Allowable Power Level - High Trip Setpoint with Inoperable Steam Line Safety Valves During Operation with One Steam Generator", Page 3/4 7-4	Remove Table. Refers to power operation with less than four reactor coolant pumps in operation. See Item 91.
94	Specification 3.9.1, "Boron Concentration", Page 3/4 9-1	Remove the specific boron concentration limit and add references to the limit provided in the COLR. Note that the boron concentration in the COLR is based upon maintaining a $K_{eff}$ of 0.95 or less including a 1% delta K/K allowance for uncertainties.
95	Specification 3.9.1, "Boron Concentration", Page 3/4 9-1	Remove the footnote. The definition of MODE 6 is that the reactor vessel head is unbolted. Therefore, the footnote is unnecessary.
96	BASES 3/4.1.1.1 and 3/4.1.1.2, "Shutdown Margin", Page B 3/4 1-1	Remove detailed description of the shutdown margin curve (Figure 3.1.1-1, "Shutdown Margin vs. Time in Cycle") which has been deleted and relocated to the COLR. See Item 27.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
97	BASES 3/4.1.1.1 and 3/4.1.1.2, "Shutdown Margin", Page B 3/4 1-1	Insert text describing use of the CEA Group Insertion Limits to verify sufficient shutdown margin is available. This information is relocated from a footnote in Specification 3.1.1.1. See Item 30.
98	BASES 3/4.1.1.1 and 3/4.1.1.2, "Shutdown Margin", Page B 3/4 1-1	Remove detailed description of the shutdown margin requirement which has been relocated to the COLR. See Item 27.
99	BASES 3/4.1.2, "Boration Systems", Page B 3/4 1-3	Delete the specific shutdown margin requirement. See Items 38, 39, 40 and 41.
100	BASES 3/4.1.3, "Moveable Control Assemblies", Unit 1 Page B 3/4 1-4, Unit 2 Page B 3/4 1-5	Delete references to Figure 3.1.3-1, "Allowable Time to Realign CEA vs. Initial total Integrated Radial Peaking Factor", which has been relocated to the COLR and to BASSS, "Better Axial Shape Selection System". NRC approval of the full core power distribution monitoring system in use will be located in the list of approved analytical methods in Section 6.9.1.9. See Items 43, 44, and 46.
101	BASES 3/4.1.3, "Moveable Control Assemblies", Page B 3/4 1-5	Delete references to Figure 3.1.3-1, "Allowable Time to Realign CEA vs. Initial Total Integrated Radial Peaking Factor", which has been relocated to the COLR and to BASSS, "Better Axial Shape Selection System". NRC approval of the full core power distribution monitoring system in use will be located in the list of approved analytical methods in Section 6.9.1.9. See Items 43, 44, and 46.
102	BASES 3/4.2.1, "Linear Heat Rate", Page B 3/4 2-1	Remove reference to relocated Figure 3.2.1-1, "Allowable Peak Linear Heat Rate vs. Time in Cycle". See Item 60.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
103	BASES 3/4.2.1, "Linear Heat Rate", Page B 3/4 2-1	Remove specific description of the uncertainty factors applied to measurements obtained from the Incore Detector Monitoring System and insert a reference to the COLR. See Item 59.
104	BASES 3/4.2.1, "Linear Heat Rate", Page B 3/4 2-1	Remove reference to relocated Figure 3.2.1-2, "Linear Heat Rate Axial Flux Offset Control Limits". See Item 61.
105	BASES 3/4.2.2, 3/4.2.3, and 3/4.2.4, "Total Planar and Integrated Radial Peaking Factors and Azimuthal Power Tilt", Page B 3/4 2-2	Delete the references to $F_{xy}$ and $F_r$ . $F_{xy}^T$ and $F_r^T$ are measured using the full core power distribution monitoring system. $F_{xy}$ and $F_r$ are not used.
106	BASES 3/4.2.2, 3/4.2.3, and 3/4.2.4, "Total Planar and Integrated Radial Peaking Factors and Azimuthal Power Tilt", Page B 3/4 2-2	Correct the BASES to agree with the specifications. Surveillances 4.2.2.1.2.a, 4.2.2.2.a and 4.2.3.2.a require that these values be measured prior to exceeding 70% power.
107	BASES 3/4.2.5, "DNB Parameters", Page B 3/4 2-2	Delete specific DNB value. DNB parameters are located in the COLR.
108	BASES 3/4.2.5, "DNB Parameters", Page B 3/4 2-2	Delete references to Figure 3.2.3-2, "DNB Axial Flux Offset Control Limits", which has been relocated to the COLR. See Item 82.

**ATTACHMENT 1 (Continued)**  
**DETAILED DESCRIPTION OF CHANGES**

ITEM	SPECIFICATION & PAGE	DESCRIPTION OF CHANGE
109	BASES 3/4.7.1.1, "Safety Valves", Page B 3/4 7-1	Remove references to power operation with less than four reactor coolant pumps in operation.
110	BASES 3/4.7.1.1, "Safety Valves", Page B 3/4 7-2	Delete values used only in the equation deleted in Item 109.
111	BASES 3/4.9.1, "Boron Concentration", Page B 3/4 9-1	Delete the specific boron concentration limit and reference to a $K_{eff}$ limit. See item 94.
112	Section 6.9.1, "Routine Reports", Page 6-22	Insert the requirement to submit a COLR as a routine report. Inserted text taken from NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants".