rules, regulations, and orders of the Commission, now or hereafter applicable; and is subject to the additional conditions specified and incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady-state reactor core power levels not in excess of 2700 megawatts-thermal in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 283, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

(a) For Surveillance Requirements (SRs) that are new, in Amendment 227 to Facility Operating License No. DPR-53, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 227. For SRs that existed prior to Amendment 227, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 227.

(3) Additional Conditions

The Additional Conditions contained in Appendix C as revised through Amendment No. 267 are hereby incorporated into this license. Calvert Cliffs Nuclear Power Plant, Inc. shall operate the facility in accordance with the Additional Conditions.

(4) Secondary Water Chemistry Monitoring Program

The Calvert Cliffs Nuclear Power Plant, Inc., shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

a. Identification of a sampling schedule for the critical parameters and control points for these parameters;

b. Identification of the procedures used to quantify parameters that are critical to control points;

C. This license is deemed to contain and is subject to the conditions set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act, and the rules, regulations, and orders of the Commission, now and hereafter applicable; and is subject to the additional conditions specified and incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor steady-state core power levels not in excess of 2700 megawatts-thermal in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 260, are hereby incorporated into this license. The licensee shall operate the facility in accordnace with the Technical Specifications.

(a) For Surveillance Requirements (SRs) that are new, in Amendment 201 to Facility Operating License No. DPR-69, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 201. For SRs that existed prior to Amendment 201, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 201.

(3) Less Than Four Pump Operation

The licensee shall not operate the reactor at power levels in excess of five (5) percent of rated thermal power with less than four (4) reactor coolant pumps in operation. This condition shall remain in effect until the licensee has submitted safety analyses for less than four pump operation, and approval for such operation has been granted by the Commission by amendment of this license.

(4) Environmental Monitoring Program

If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken to eliminate or significantly reduce the detrimental effects or damage.

4.0 DESIGN FEATURES

4.1 Site Location

The site for the Calvert Cliffs Nuclear Power Plant is located on the western shore of the Chesapeake Bay in Calvert County, Maryland, about 10-1/2 miles Southeast of Prince Frederick, Maryland. The site is approximately 45 miles southeast of Washington, DC, and 60 miles south of Baltimore, Maryland. The exclusion area boundary has a minimum radius of 1,150 meters from the center of the plant.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions. For Unit 2 Cycle 14 only, advanced cladding material may be used in one lead test assembly as described in an approved temporary exemption dated March 6, 2001. For Unit 1 Cycle 19 or Unit 2 Cycle 17 only, advanced cladding material from Framatome-ANP may be used in up to two lead test assemblies as described in approved temporary exemption dated November 9, 2006. For Unit 1 Cycle 19 or Unit 2 Cycle 17 only, advanced cladding material from Westinghouse may be used in up to two lead test assemblies as described in approved temporary exemption dated November 9, 2006. For Unit 1 Cycle 19 only, advanced cladding material from AREVA may be used in up to two lead test assemblies as described in approved temporary exemption dated December 17, 2007. For Unit 1 Cycle 19 only,

4.0 DESIGN FEATURES

advanced cladding material from Westinghouse may be used in up to two lead test assemblies as described in approved temporary exemption dated December 17, 2007.

4.2.2 Control Element Assemblies

The reactor core shall contain 77 control element assemblies.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.00 weight percent;

b. $k_{eff} < 1.00$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.2 of the Updated Final Safety Analysis Report (UFSAR) and $k_{eff} \leq 0.95$ if fully flooded with water borated to 350 ppm, which includes an allowance for uncertainties as described in Section 9.7.2 of the UFSAR;

c. A nominal 10-3/32-inch center-to-center distance between fuel assemblies placed in the high density fuel storage racks;

4.3.1.2 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;

4.0 DESIGN FEATURES

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7.1. of the UFSAR; and

d. A nominal 18-inch center-to-center distance between fuel assemblies placed in the storage racks.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 63 ft.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity, for both Units 1 and 2, limited to no more than 1830 fuel assemblies.

5.6 Reporting Requirements

46. CENPD-132, Supplement 4-P-A, "Calculative Methods for the CE Nuclear Power Large Break LOCA Evaluation Model"

47. CENPD-137, Supplement 2-P-A, "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model"

48. WCAP-11596-P-A, "Qualification of the PHOENIX-P, ANC Nuclear Design System for Pressurized Water Reactor Cores"

49. WCAP-10965-P-A, "ANC: A Westinghouse Advanced Nodal Computer Code"

50. WCAP-10965-P-A Addendum 1, "ANC: A Westinghouse Advanced Nodal Computer Code; Enhancements to ANC Rod Power Recovery"

51. WCAP-16072-P-A, "Implementation of Zirconium Diboride Burnable Absorber Coatings in CE Nuclear Power Fuel Assembly Designs"

52. WCAP-16045-P-A, "Qualification of the Two-Dimensional Transport Code PARAGON"

53. WCAP-15604-NP, "Limited Scope High Burnup Lead Test Assemblies"

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, ECCS limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Not Used