

APPLICATION FOR AMENDMENT
TO
FACILITY OPERATING LICENSE NO. NPF-3
FOR
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NO. 1

Enclosed are forty-three (43) copies of the requested changes to the Davis-Besse Nuclear Power Station Unit No. 1 Facility Operating License No. NPF-3, together with the Safety Evaluation for the requested change.

The proposed changes include Cycle 4 Reload Report (BAW-1783, Revision 1, October, 1983).

By /s/ R. P. Crouse
Vice President, Nuclear

Sworn and subscribed before me this 17th day of February, 1984.

Laurie A. Hinkle, nee (Brudzinski)
Notary Public, State of Ohio
My Commission Expires May 16, 1986

S E A L

8402290120 840217
PDR ADOCK 05000346
P PDR

Docket No. 50-346
License No. NPF-3
Serial No. 1027
February 17, 1984

Attachment

I. Changes to Davis-Besse Nuclear Power Station Unit 1, Appendix A
Technical Specifications per BAW-1783, Revision 1 Cycle 4 Reload
Report.

- A. Time required to Implement. This change is to be effective
upon NRC approval.
- B. Reason for Change (Facility Change Request 84-005).

To revise Cycle 4 Reload Report to allow withdrawal of APSR and
coastdown at the end of cycle.

- C. Safety Evaluation
(See Attached)
- D. Significant Hazard Consideration
(See Attached)

SAFETY EVALUATION

This amendment request is to correct an omission in the original Reload Report Technical Specifications and to provide the options of allowing Axial Power Shaping Rod (APSR) withdrawal and power coastdown for the currently operating Cycle 4 in accordance with the limits and analysis presented in the attached Reload Report BAW-1783, Revision 1. The safety function of the Reload Report and the affected Technical Specifications is to ensure operation of the core within safety limits.

The effect of APSR withdrawal and power coastdown is to extend the cycle length. The Cycle 4 physics parameters for the base design resemble the values presented in the Cycle 2 Reload Report and the BOC values given in the Cycle 3 Reload Report. The physics parameters for the alternate design which reflects the increased cycle length resemble the reference Cycle 3 values. Small differences are to be expected until an equilibrium cycle is achieved.

The thermal-hydraulic design results in the alternate Cycle 4 do not differ significantly from that in Cycle 3. The moderator and Doppler coefficients remain negative for Cycle 4. The moderator coefficient is less negative than the FSAR value so that the FSAR value is bounding for main steam line break or any overcooling transients. The maximum drop rod worth is less than the FSAR value which compensates for the slightly more negative Doppler coefficient at BOC4. The ejected rod worth is also smaller than the FSAR value. The boron reactivity worth is also bounded by the FSAR value for the moderator dilution accident. The FSAR accidents have been examined by B&W with respect to the Cycle 4 parameters to ensure that the thermal performance during the hypothetical transients has not been degraded.

The pertinent Technical Specifications in the revised Reload Report have been modified for Cycle 4 operation to account for changes in power peaking, control rod worths, APSR withdrawal, and an omission in Table 8-2. Additional Rod Insertion Limit Curves are provided for operation with APSRs withdrawn. Table 8-2 Quadrant Power Tilt Limits (Technical Specification Table 3.2.2) has been revised to incorporate the new cycle dependant steady state and transient tilt limits for the symmetrical incore detector system with the values changing from 3.03 to 3.43 and 8.53 to 8.93 respectively. These limits should have been changed in the original Reload Report. The limits have been relaxed slightly because of the replacement of some of the incore detectors for Cycle 4. The new detectors provide an improved overall system accuracy. The core power distribution tests are used as a check on the power distribution in the core to identify any abnormalities and to maintain the quadrant power tilt within the Technical Specifications limits. It has, therefore, been determined that this revision will not adversely affect the operation of DB-1 nor endanger the health or safety of the general public.

Pursuant to the above, this request is not an unreviewed safety question.

SIGNIFICANT HAZARD CONSIDERATION

This amendment request is to revise the Reload Report for Cycle 4 allowing Axial Power Shaping Rods (APSR) withdrawal and power coastdown for the current cycle and does not represent a Significant Hazard. The effect of the APSR withdrawal and power coastdown is to extend the cycle length. This request is similar to part of the approved Cycle 3 Reload Report.

The Cycle 4 physics parameters for the base design resemble the values presented in the Cycle 2 Reload Report and the BOC values given in the Cycle 3 Reload Report. The physics parameters for the alternate design which reflects the increased cycle length resemble the reference Cycle 3 values. Small differences are to be expected until an equilibrium cycle is achieved.

The pertinent Technical Specifications in the revised Reload Report have been modified for Cycle 4 operation to account for changes in power peaking, control rod worths, APSR withdrawal, and an omission in Table 8-2. Additional Rod Insertion Limit Curves are provided for operation with APSRs withdrawn. Table 8-2 Quadrant Power Tilt Limits (Technical Specification Table 3.2.2) has been revised to incorporate the new cycle dependant steady state and transient tilt limits for the symmetrical incore detector system with the values changing from 3.03 to 3.43 and 8.53 to 8.93 respectively. These limits should have been changed in the original Reload Report. The limits have been relaxed slightly because of the replacement of some of the incore detectors for Cycle 4. The new detectors provide an improved overall system accuracy. The core power distribution tests are used as a check on the power distribution in the core to identify any abnormalities and to maintain the quadrant power tilt within the Technical Specifications limits.

The Commission has provided guidance concerning the application of the standards in 10 CFR 50.92 by providing certain examples (48 FR 14870). One of the examples of actions involving no significant hazards considerations related to a change for a nuclear power reactor, resulting from a nuclear reactor core reloading, if no fuel assemblies significantly differ from those found previously acceptable to the NRC for a previous core at the facility in question are involved. This assumes that no significant changes are made to the acceptance criteria for the technical specifications, that the analytical methods used to demonstrate conformance with the technical specifications and regulations are not significantly changed, and that NRC has previously found such methods acceptable. (example iii)

This request involves a revision to a approved Reload Report (Cycle 4) and is similar to the previously submitted and approved Reload Report (Cycle 3). All accident analysis and safety margins are bounded by the approved Cycle 4 Reload Report.

Based on the above information, this amendment request would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or

different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

Therefore, based on the above, the requested license amendment does not present a Significant Hazard.