



RICHARD P. CROUSE
Vice President
Nuclear
(419) 259-5221

Docket No. 50-346

License No. NPF-3

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Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz
Operating Reactor Branch No. 4
Division of Operating Reactors
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

This letter is in response to Mr. G. C. Lainas' letter of March 23, 1984 (Log No. 1473) concerning "Application Dated February 17, 1984 - Inadequate No Significant Hazards Consideration Determination". Attached is a revised Significant Hazard Consideration for extended Cycle 4 Reload Report for the Davis-Besse Nuclear Power Station Unit No. 1.

Very truly yours,

R P Crouse / JRM

RPC:GAB:lah

cc: DB-1 NRC Resident Inspector
Mr. James W. Harris

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Add: G.C. Lainas
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SIGNIFICANT HAZARD CONSIDERATION

This amendment request is to revise the Reload Report for Cycle 4 to allow an alternate Cycle 4 design of 280 EFPD, based on Axial Power Shaping Rods (APSR) withdrawal and power coastdown to extend the cycle length and does not represent a Significant Hazard. 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 reflect the increased cycle length resemble the reference Cycle 3 values. Small differences are to be expected until an equilibrium cycle is achieved.

Except for the TACO2 fuel performance code and revised cladding models in the Emergency Core Cooling System (ECCS) code package, there have been no significant changes to the analytical methods used and accepted for previous cores to demonstrate conformance with acceptance criteria and NRC regulations. These methods also applied to the original Cycle 4 Reload Report (Approved and issued in Amendment 61 dated September 21, 1983 Log No. 1369). The TACO2 computer code contains the NRC imposed densification model and results in a 0.5 kw/ft reduction from the 16.5 kw/ft LOCA limit at the 2ft. elevation reported in BAW-10105 due to the change in heat transfer through the altered gap size. It is projected that there are no changes to the kw/ft limit at other elevations due to TACO2. The impact of NUREG-0630 has been incorporated into the ECCS model for Cycle 4. It contains revised models for cladding rupture, strain and blockage during and following a LOCA and results in an additional 0.5 kw/ft reduction. The overall effect, then is a new LOCA limit of 15.5 kw/ft. The 15.5 kw/ft analysis was only performed for the 2 ft. elevation. Using the 177 FA lowered loop analyses as a guideline, engineering judgement was used to establish the LOCA limits at the remaining elevations. This restriction applies only to the first 24 EFPD, at which time the temperature is sufficiently reduced to allow the limits reported in BAW-10105.

The measurement independent steady state quadrant tilt limit for all cycles is the same at 4.92%. This translates to a maximum peaking increase of 7.36%.

In Cycle 3, as well as in all previous cycles, the quadrant power tilt setpoint (3.03%) was calculated using the most conservative bounding type of analysis (end of life for the Rhodium detector). In Cycle 4, the setpoint (3.43%) was calculated using the actual data for the depletion of the incore Rhodium detectors at the end of the operating cycle. If the same method was used for Cycle 3 analysis, the resulting setpoint could have been as high as 3.62% (instead of 3.03%). This same rationale applies for the transient setpoints. In summary, for all these setpoints, the maximum peaking increase assumed due to quadrant tilt remains unchanged.

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.