

No Significant Hazards Consideration Evaluation

Duke Power Company has determined that the present amendment request poses no significant hazards as defined by NRC regulations in 10CFR 50.92. This ensures that operation of the facility in accordance with the proposed amendment 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.

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48FR14870) of amendments that are considered not likely to involve a significant hazards consideration. Example (i) relates to a purely administrative change to Technical Specifications. Example (ii) relates to a change which constitutes an additional limitation, restriction, or control not presently included in Technical Specifications. Example (iii) relates to nuclear power reactor core reloads.

Example (i) of amendments not likely to involve significant hazards considerations expressly applies to the addition of references to the VIPRE-01 thermal hydraulic code. Use of VIPRE has been previously reviewed and approved by the NRC by letter dated July 19, 1989. Thus, the addition of references to VIPRE are purely administrative in nature.

Example (ii) expressly applies to the deletion of provisions which allow operation with only two reactor coolant pumps. Deletion of this operational flexibility is an additional limitation not presently included in Technical Specifications.

Example (iii) of amendments not likely to involve significant hazards considerations expressly applies in that:

- 1) no fuel assemblies are significantly different from those found previously acceptable to the NRC or a previous core at the facility in question are involved;
- 2) no significant changes have been made to the acceptance criteria for the Technical Specifications;

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- 3) the analytical methods used to demonstrate conformance with the Technical Specifications and regulations are not significantly changed; and
- 4) The NRC has previously found such methods acceptable.

The Batch 14 MK-B8 fuel assemblies are similar in design to the MK-B7 fuel previously reloaded into Oconee 3 Cycle 11. Like the MK-B7 fuel design, the MK-B8 features intermediate zircaloy grids, a skirtless inconel upper end grid (dimensionally equivalent to the intermediate zircaloy grids), and a removable upper end fitting. A new feature for the MK-B8 is a debris fretting resistant fuel rod design, which utilizes a lengthened solid lower end plug extending below the bottom end grid. The fuel rods' prepressurization level was also slightly reduced to compensate for the reduction in plenum void volume.

The Oconee 3, Cycle 12 core will have 44 BPRAs inserted in the Batch 14 fuel assemblies. 36 of the BPRAs will be new, and the remaining 8 will be reinserted from the Cycle 11 core (once burned).

The Oconee 3, Cycle 12 Reload Report (Attachment 3) justifies the operation of the Cycle 12 at the rated core power of 2568 MWt. Included are the required analyses as outlined in the US NRC document "Guidance for Proposed License Amendments Relating to Refueling," June 1975. The Reload Report employs analytical techniques and design bases established in reports submitted for previous reloads which were accepted by the NRC and its predecessor. These techniques are described in the Reload Report references.

As discussed in Section 7 of the Reload Report, a generic LOCA analysis for the B&W 177-FA, lowered loop NSSS has been performed using the Final Acceptance Criteria ECCS Evaluation Model (as reported in BAW-10103, Rev. 3). The LOCA-Limited Maximum Allowable Linear Heat Rate given in BAW-10103 has been impacted by TACO2, NUREG-0630, and FLECSET. The net effect of these factors is summarized by the LOCA kw/ft limits in BAW-1915P. The LOCA kw/ft limits given in BAW-1915P were used in the design of Oconee 3, Cycle 12.

Revisions to Technical Specifications included in this amendment request account for minor changes in power peaking and control rod worths, include use of the VIPRE thermal-hydraulic code and remove all specifications associated with two reactor coolant pump operation.

With supporting reference to previously performed analyses, the following evaluation measures aspects of this amendment request against the Part 50.92(c) requirements to demonstrate that all three standards are satisfied.

First Standard

(Amendment would not) involve a significant increase in the probability or consequences of an accident previously evaluated.

Each accident analysis addressed in the Oconee Final Safety Analysis Report (FSAR) has been examined with respect to changes in Cycle 11 parameters to determine the effect of the Cycle 12 reload and to ensure the thermal performance during hypothetical transients is not degraded. The transient evaluation of Cycle 12 is considered to be bounded by previously accepted analyses. Section 7 of the Reload Report addresses "Accident and Transient Analysis" for this core reload. This analysis ensures that the proposed reload will not involve a significant increase in the probability or consequences of any accident previously evaluated.

Changes to Technical Specifications which incorporate reference to the VIPRE thermal hydraulic code are purely administrative in nature. Use of this code has been previously reviewed and approved by the NRC. As such, this change will not result in a significant increase in the probability or consequences of previously evaluated accidents.

Changes to Technical Specifications which delete provisions for two reactor coolant pump operation are additional limitations not presently included in Technical Specifications. Thus, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Second Standard

(Amendment would not) create the possibility of a new or different kind of accident from any accident previously evaluated.

The analyses performed in support of this reload are in accordance with the US NRC document "Guidance for Proposed License Amendments Relating to Refueling," June 1975. The transient evaluation of Cycle 12 is considered to be bounded by previously accepted analyses (reference Reload Report Section 7), as such the proposed reload does not in any way create the possibility of a new or different kind of accident from any accident previously evaluated.

Changes to Technical Specifications which incorporate reference to the VIPRE thermal hydraulic code are purely administrative in nature. As such, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Changes which delete provisions for two pump operation are an additional limitation not presently included in Technical Specifications. Thus, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Third Standard

(Amendment would not) involve a significant reduction in a margin of safety.

The issue of margin of safety for a reload modification involves the following areas:

1. Fuel System Design considerations,
2. Nuclear Design considerations, and
3. Thermal-Hydraulic Design considerations.

Sections 4, 5, and 6 respectively of the Oconee Unit 3, Cycle 12 Reload Report addresses the above areas. The value limits and margins discussed in these areas are well within the allowable limits and requirements, and reflect no significant reductions to any margins of safety. By examining these Sections of the Reload Report and the Cycle 12 core thermal and kinetic properties (with respect to previous cycle values), it can be concluded that this core reload will not reduce the ability of Oconee Unit 3 to operate safely during Cycle 12.

Changes which incorporate reference to the VIPRE code are purely administrative in nature. Changes which delete provisions for two pump operation are an additional limitation not presently included in Technical Specifications. As such, these changes will not result in a significant reduction in any margin of safety.

The above evaluation, with its accompanying references shows that the three Part 50.92(c) standards are satisfied. In summary, Duke has determined and submits that the proposed reload described herein does not represent any significant hazards.