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SUBJECT: Forwards comments on draft rept, "Review of Oconee-3 PRA:
 Internal Events, Cove Damage Frequency," transmitted by NRC
 B50906 ltr. Info processed by BNL during review requested.

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November 26, 1985

H.R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention J.F. Stoltz

Subject: Oconee Nuclear Station
Docket Nos. 50-269, 50-270, 50-287

Dear Mr. Denton:

By letter dated September 6, 1985, the NRC transmitted a Draft report entitled, "A Review of the Oconee -3 Probabilistic Risk Assessment: Internal Events, Core Damage Frequency". The NRC requested Duke to review and provide comments regarding the Draft report. Enclosed, please find Duke's comments.

For the majority, Duke agrees with the calculations and conclusions in the report. General comments are noted below, while specific comments are attached to this letter.

Numerous comparisons are made in the report to other PRAs and analyses. In some cases the comparisons are applicable; however, most of the references are unnecessary and tend to mislead the reader by implying invalid comparisons to analyses performed for different plants using different methodologies. References to other analyses should be made only when applicable.

Throughout the review, various failure probabilities are changed by the reviewers to provide what they perceive to be more realistic modeling of plant accident sequences. In all but a few cases, failure probabilities are increased. No supporting evidence is provided for the increase in failure probabilities.

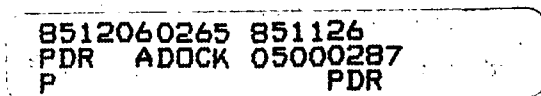
Finally, Duke is making every effort to maintain the OPRA and improve its quality. A substantial amount of information was obviously processed by the Brookhaven team throughout the review. Duke would like to obtain copies of the detailed models, computer runs, and other data which, for practical purposes, could not be incorporated in the final report.

Very truly yours,



H.B. Tucker

/jgm



cc: Ms. Helen Nicolaras
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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COMMENTS ON BROOKHAVEN NATIONAL LABORATORY'S
REVIEW OF THE OCONEE PRA

1. Several tables and figures are referenced in the report but do not appear in the text. Missing are Tables 0.1 through 0.4 and Figures 3.17 through 3.21.
2. Please provide additional information in support of the following BNL assumptions:
 - a. the increase in basic event failure probabilities for the loss of instrument air fault tree (Table 4.6).
 - b. the increase in the failure probability of LPSW suction or discharge valves (Section 4.1.2.3.d).
 - c. the increase in the probability of loss of ICS power on bus KI (Section 4.1.2.3.e).
 - d. the increase in the probability of operator failure to transfer turbine-driven EFW pump suction source to the hotwell during blackout conditions (Section A.1.9.2.c).
 - e. the factor of 10 difference in the recovery value for valves LPSW-77 or LPSW-78 (Section A.4.2.2)
 - f. the Oconee batteries will deplete in 4 hours (Section A.5.9.2).
3. Executive Summary, pg. 3 and Section 5.5: Duke disagrees with the value of 0.5 for the probability of failure to recover instrument air in one hour. We understand that this value is based on the judgment of the reviewers and on the value of 0.3 used in the OPRA for this recovery in 2 hours. Two losses of instrument air have occurred at Oconee and both were recovered in a short period of time (about 20 minutes). If these occurrences are consistent with the calculated initiating event probability (as noted by the reviewers on page 4-9), then their successful restorations should also be reflected in the recovery probability. The selection of 0.5 for the recovery value indicates that this is not the case. Duke suggests that, based on successful experience at Oconee, all failures to recover instrument air be reduced and the sequences requantified.
4. Pg. 2-11, Section 2.2.1.1: Duke disagrees with the creation of a third category of LOCAs -- the very small break LOCA. Calculations available at the time of the OPRA supported only one category of small break LOCAs for all pipes less than 4 inches in diameter. Recently, even more sophisticated calculations on the Oconee reactors show that HPI initiation will occur as quickly as 30 minutes after very small break LOCAs (Reference 1). This further supports the OPRA modeling of breaks smaller than 1.5 inches in diameter, since plant behavior is not expected to vary significantly for very small break LOCAs.

5. Duke believes the value of 0.8 assigned to the closed pressurizer PORV block valve in the ATWS quantification is overly conservative. The valve was closed due to temporary leakage problems in the PORV and is not intended to be the actual operating mode for the future. Although the modification of the PORV to prevent leakage took some time to complete, the valves are functioning properly now with the block valves open.
6. Section A.5.4.2: Please note that the OPRA core damage frequency for Bin III Type D is $6.0E-8/\text{yr}$, not $6.0E-7/\text{yr}$.
7. Section A.5.4.2: Please provide the appropriate reference for the increase in initiating event T_{11} . This change is not discussed in Section 1 as indicated by the reference.
8. Section A.5.10.2.c: This paragraph is not clear. What is meant by "the frequency of that period."? Also, failure modes added by the reviewers should be identified.

Reference

- ¹ Los Alamos National Laboratory, Dominant Accident Sequences in the Oconee-1 Pressurized Water Reactor, NUREG/CR-4140, Los Alamos, New Mexico, April, 1985.