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Subject: Report of Error in the Emergency Core Cooling System Evaluation Model [10CFR50.46(a)(3)(ii)]

Gentlemen:

On April 27, 1995, Toledo Edison (TE) determined, based upon information from B&W Nuclear Technologies (BWNT), that the Nuclear Regulatory Commission (NRC) approved Version 9.3 of THETA1-B computer code used in Emergency Core Cooling System (ECCS) evaluation model for B&W fuel designs was in error. The error in the current ECCS evaluation model results in calculated Peak Cladding Temperature (PCT) reduction of over 50°F at some locations within the core. This report is being submitted in accordance 10CFR50.46(a)(3)(ii) as a significant change or error in an acceptable evaluation model.

While performing an analysis for a new fuel design, BWNT discovered an error in the THETA1-B computer code which is part of the approved 10CFR50, Appendix K ECCS evaluation model. The effect is confined to the post-rupture gap dimension in any unruptured, plastic-deformed cladding segment and results in a conservative error of 150° to 200°F for these segments. Specific details of the errors in the evaluation model were provided to the NRC by BWNT in a letter dated May 26, 1995.

Toledo Edison has reviewed the implication of the error discovered by BWNT for the fuel design for the Davis-Besse Nuclear Power Station (DBNPS). The resulting PCT for the ruptured nodes are not affected by the error and the PCTs for unruptured nodes are reduced by the amounts

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mentioned above. Given the conservatism of the error, the DBNPS operating limits remain valid and bounding for the fuel designs currently in use. Therefore, no changes or additions to operational limits need to be imposed by TE.

Additional operating margin is not presently required for the unruptured node segments. Therefore, Toledo Edison intends to ensure that the THETA1-B error is documented, but will not pursue revision to the existing evaluation model. The existing evaluation model is in the process of being replaced by a RELAP- 5 based evaluation model. A topical report (BAW-10192) describing the new evaluation model was submitted for NRC review in February 1994. The new model does not utilize the THETA1-B code. Therefore, it does not contain the same conservative error as the the existing evaluation model.

Should you have any questions or require additional information, please contact Mr. William T. O'Connor, Manager - Regulatory Affairs, at (419) 249-2366.

Very truly yours,

GAB/eld

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