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February 23 1982

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Unit 3
ECCS Analysis Results
Presented in Exxon Report
XN-NF-81-75(P)
NRC Dockets No. 50-249

Reference (a): T. J. Rausch letter to H. R. Denton dated January 11, 1982.

Dear Mr. Denton:

Commonwealth Edison proposed in Reference (a) to amend the Dresden Unit 3 Technical Specifications to support the Cycle 8 reload and future reloads using fuel supplied by Exxon Nuclear Company, Inc. (ENC). Attachment 4 (XN-NF-81-75(P)) to Reference (a) provided the results of the ECCS analyses performed by ENC for Dresden 3 using the RODEX2 model. The RODEX2 code is currently being reviewed by your staff, and has replaced the GAPEX code for fuel stored energy analysis.

In order to prevent any disruption in the NRC review of our submittal, a second ECCS analysis has been performed for Dresden 3 using the GAPEX model. This letter provides the results of this second analysis. These results were discussed informally with your staff.

Evaluation of the RODEX2-based MAPLHGR limits for ENC XN-1 8x8 fuel was undertaken using the GAPEX for stored energy calculations over the first 10,000 MWD/MT of the fuel lifetime. This limited burnup interval was chosen because the RODEX2 review should be completed far in advance of the time the highest burnup ENC bundle reached 10,000 MWD/MT (in second irradiation cycle).

The peak cladding temperature (PCT) at beginning-of-life (BOL) conditions in the fuel for the GAPEX-based analysis was 1909°F, compared to 1879°F for the RODEX2-based analysis. Both analyses were based on a BOL MAPLHGR limit of 13.0 kW/ft., and both analyses resulted in a peak local metal-water reaction (MWR) of 0.8%.

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The PCT for an assembly average burnup of 10,000 MWD/MT and a MAPLHGR of 13.0 kW/ft. was 1886°F for the GAPEX-based analysis, compared to 1942°F for the RODEX2-based analysis. Similarly, the GAPEX-based peak local MWR was 0.8% as opposed to RODEX2-based value of 1.0%.

Based on these comparative calculations, we conclude that the MAPLHGR limits requested in our application dated January 11, 1982, are valid for ECCS analyses based on either ENC's approved stored energy model, GAPEX, or ENC's revised fuel rod thermal mechancial response evaluation model, RODEX2, through at least 10,000 MWD/MT.

Please address any questions you may have concerning this matter to this office.

One (1) signed original and thirty-nine (39) copies o this transmittal are provided for your use.

Very truly yours,

Thomas J. Rausch
Nuclear Licensing Administrator
Boiling Water Reactors

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cc: Region III Inspector - Dresden

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