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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 17 1980

Docket Nos. 50-440
and 50-441

Mr. Dalwyn R. Davidson
Vice President, Engineering
The Cleveland Electric Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

Dear Mr. Davidson:

SUBJECT: STAFF POSITION ON CLADDING SWELLING AND RUPTURE MODELS FOR LOCA ANALYSES

Enclosed is the staff position concerning the application of the cladding swelling and rupture models for loss of coolant accident analysis. We request that you provide the supplemental calculations described in the second paragraph of the enclosure.

Please advise us of the schedule for your response. If you require any clarification, contact the staff's assigned licensing project manager.

Sincerely,

F. J. Miraglia

for Robert L. Tedesco
Assistant Director for Licensing
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

Mr. Dalwyn R. Davidson
Vice President, Engineering
The Cleveland Electric Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

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ENCLOSURE

The NRC staff has been generically evaluating three materials models that are used in ECCS evaluations. Those models predict cladding rupture temperature, cladding burst strain, and fuel assembly flow blockage. We have (a) discussed our evaluation with vendors and other industry representatives (Reference 1), (b) published NUREG-0630, "Cladding Swelling and Rupture Models for LOCA Analysis" (Reference 2), and (c) required licensees to confirm that their operating reactors would continue to be in conformance with 10 CFR 50.46 if the NUREG-0630 models were substituted for the present materials models in their ECCS evaluations and certain other compensatory model changes were allowed (References 3 and 4).

Until we have completed our generic review and implemented new acceptance criteria for cladding models, we will require that the ECCS analyses in your FSAR be accompanied by supplemental calculations to be performed with the materials models of NUREG-0630. For these supplemental calculations only, we will accept other compensatory model changes that may not yet be approved by the NRC, but are consistent with the changes allowed for the confirmatory operating reactor calculations mentioned above.

REFERENCES

1. Memorandum from R. P. Denise, NRC, to R. J. Mattson, "Summary Minutes of Meeting on Cladding Rupture Temperature, Cladding Strain, and Assembly Flow Blockage," November 20, 1979.

2. D. A. Powers and R. O. Meyer, "Cladding Swelling and Rupture Models for LOCA Analysis," NRC Report NUREG-0630, April 1980.

3. Letter from D. G. Eisenhut, NRC, to all Operating Light Water Reactors, dated November 9, 1979.

4. Memorandum from H. R. Denton, NRC, to Commissioners, "Potential Deficiencies in ECCS Evaluation Models," November 26, 1979.