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Writer's Direct Dial Number:

December 30, 1983  
5211-83-375

Office of Nuclear Reactor Regulation  
Attn: J. F. Stolz, Chief  
Operating Reactors Branch No. 4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

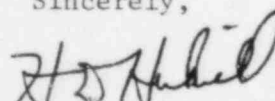
Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
Natural Circulation Cooldown (GL 81-21)

In our letter dated September 26, 1983 GPU Nuclear committed to a December, 1983 submittal of a natural circulation cooldown analysis using the RETRAN computer code. Reference was made to a detailed heat conductor nodalization of the upper head for use in RETRAN. Our investigations since then have shown that a better natural circulation cooldown calculation can be accomplished using a multi-dimensional heat conduction code. GPU Nuclear has embarked on such an analysis using the HEATING-5 code. HEATING-5 provides the multi-dimensional capability to model the vessel more accurately and possesses flexibility in the choice of boundary condition representation. A 46 region HEATING-5 model has been developed which represents the reactor vessel head in two dimensions. The use of three dimensions was judged not to be necessary.

This approach is being utilized because it provides a more realistic representation of the heat transfer processes in this region of the reactor vessel. The additional time required to put the more complex HEATING-5 model together necessitates a submittal date beyond December, 1983. To date, the model has been formulated and is in the process of being initialized. In order to verify the input, perform the long transient runs and review and document the results, it will necessitate our submitting the analysis to the NRC by March 20, 1984.

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PDR ADCK 05000289  
P PDR

Sincerely,

  
H. D. Hukill  
Director, TMI-1

HDH:LWH:vjf  
cc: R. Conte  
J. Van Vliet

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