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June 7, 1982

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

Subject: Byron Station Units 1 and 2  
Braidwood Station Units 1 and 2  
Detection of Inadequate Core  
Cooling  
NRC Docket Nos. 50-454, 50-455,  
50-456 and 50-457

Dear Mr. Denton:

This is to provide additional information regarding instrumentation to be installed at Byron and Braidwood Stations for the detection of inadequate core cooling. Review of this information should help close Outstanding Item 9 of the Byron SER.

Attachment A to this letter is a status report on inadequate core cooling, activities, including Byron/Braidwood specific design/hardware and implementation efforts. The status report includes a design description of the three-element inadequate core cooling (ICC) detection system. Heated junction thermocouple (HJTC) instruments at several axial locations in the reactor vessel above the fuel alignment plate provide a measurement of the reactor vessel water inventory and its trend. Although additional specific engineering and testing is required, sufficient design and test information has been generated to allow procurement of the subcooled margin monitor and heated junction thermocouple systems to proceed. In addition, the core exit thermocouple system is being upgraded. The details of this design activity were discussed with the NRC Staff at meetings in Bethesda, Maryland, on May 28, 1980, and March 4, 1981.

When complete information is available on this equipment the attached status report will be revised and included in Appendix E of the Byron/Braidwood FSAR. In the interim, it is requested that the NRC identify any additional information required to complete their review. Please direct questions to this office.

One signed original and fifteen copies of this letter and the attachment are provided for your use.

Very truly yours,

T. R. Tramm  
Nuclear Licensing Administrator

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