



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

December 6, 1982

Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Quad Cities Station Units 1 and 2
Information Concerning the Fire Protection
Associated Circuits Safe Shutdown Analyses
NRC Docket Nos. 50-254/265

Reference (a): T. J. Rausch letter to D. G. Eisenhut
dated October 18, 1982

Dear Mr. Eisenhut:

In reference (a), Commonwealth Edison provided written documentation of seven items concerning fire protection safe shutdown analyses at Quad Cities Units 1 and 2 that had been discussed in a September 17, 1982 telephone conference. Our item 2 and item 3 responses were labeled as preliminary because the final analysis results had not yet been verified and approved. As described below, the final result of the first analysis (item 2) is the same as the preliminary response given in Reference (a). The final result of the second analysis is slightly different, but the conclusion remains unchanged.

Item #2

Provide an analysis stating the maximum time in which the core can safely sustain itself without the need for RCIC and state how long it will take for an operator to start RCIC locally.

Preliminary Response

The preliminary results of the analysis show that the core can maintain a water level above the top of the active fuel without the initiation of the RCIC Flow for a maximum of fourteen minutes.

The time it takes to locally start the RCIC system is estimated to be well within this time limit.

*A006
1/40*

Finalized Responses

The final analysis, entitled "RPV Liquid Level Following Fire Protection Safe Shutdown" addresses the transient RPV liquid level following a postulated fire accompanied by a reactor scram, main steam and feedwater isolation, and the loss of off-site power and the AC power to all safety system intended to supply coolant to the reactor. The only coolant make-up is provided by actuation of the reactor core isolation cooling (RCIC) system. The study demonstrates that the active fuel zone will remain flooded if the RCIC system is actuated within 700 seconds of the low RPV water level trip signal, which is calculated to occur 154 seconds after the reactor scram.

Item #3

Provide an analysis showing torus temperature vs. time during extended RCIC operation to show that temperature indication of the torus water is not necessary.

Preliminary Response

The preliminary analysis on torus temperature vs. time during an extended RCIC operation shows that torus cooling must be initiated within four and one half (4 1/2) hours. This time frame suggests that torus temperature indication would not be an important consideration in the first four hours of an event requiring RCIC operation.

Finalized Response

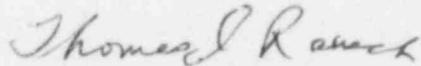
The final analysis used a model of the RCIC system which postulates that the RCIC system takes suction from the torus. This modeling, rather than having the RCIC system take suction from the condensate storage tank, results in a faster rise of the torus temperature. Using the assumption that the torus be used as a source for the RCIC system results in a more conservative analysis. The assumption that complete steam condensation will occur below 170°F was used in both cases.

The analysis, entitled "Torus Water Temperature During Hot Shutdown Transient", shows that prevention of the torus temperature of exceeding 170° requires that one train of the RHR system be started within three (3) hours and thirty-five (35) minutes of initiation of the transient. This time frame also suggests that the torus temperature indication would not be an important consideration in the first three and one-half (3 1/2) hours of an event requiring RCIC operation.

If you have any questions concerning this matter, please contact this office. The detailed results of the above analyses are on file.

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

Very truly yours,



Thomas J. Rausch
Nuclear Licensing Administrator

cc: RIII Inspector - Quad Cities

5540N