February 11, 1997

Ms. Irene M. Johnson, Acting Manager
Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE REVISED STEAM GENERATOR TUBE RUPTURE ANALYSIS - BYRON STATION AND BRAIDWOOD STATION (TAC NOS. M97315, M97316, M97317 AND M97318)

Dear Ms. Johnson:

On November 13, 1996, Commonwealth Edison Company (ComEd) submitted its revised steam generator tube rupture analysis for Byron, Units 1 and 2, and Braidwood, Units 1 and 2. During the course of our review, we have identified the need for further information as discussed in the enclosed request for additional information (RAI). Please provide your response to the request so that we may maintain our schedule for review of your submittal.

Sincerely,

/s/

George F. Dick, Jr., Project Manager
Project Directorate III-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455,
STN 50-456, STN 50-457

Enclosure: RAI

cc w/encl: see next page

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REQUEST FOR ADDITIONAL INFORMATION

REVISED STEAM GENERATOR TUBE RUPTURE ANALYSIS

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNITS 1 AND 2; BRAIDWOOD STATION, UNITS 1 AND 2

DOCKET NOS. STN 50-454, STN 50-455, STN 50-456, AND STN 50-457

A. Questions Regarding Margin to Overfill Calculations

1. The submittal states that as part of the T-HOT reduction program Byron and Braidwood have been analyzed for a $T_{ave}$ window of 569.1 degrees Fahrenheit tc 588.4 degrees Fahrenheit. The analysis submitted assumes 567.1 degrees Fahrenheit, 2 degrees Fahrenheit lower than the low end of the $T_{ave}$ window. The Updated Final Safety Analysis Report states (pg. 15.0-9) that the average reactor coolant system temperature uncertainty is ±4.7 degrees Fahrenheit. Please explain why the choice of 567 degrees Fahrenheit bounds the operational range with instrument uncertainty included.

2. The analysis concluded that the limiting margin to overfill is 60 cubic feet. Given that this is probably less than a half a foot of water level, less than 30 seconds of auxiliary feedwater flow, less than a few seconds of main feedwater flow and less than two percent of the total steam generator volume, please provide greater justification that this very small margin gives reasonable assurance that the steam generators will not fill. An evaluation of the sensitivity of key parameters to the margin available or an estimation of the calculational uncertainty may be helpful in determining if the margin is adequate.

3. The original staff approved analysis was performed using RETRAN-02 MOD 3. The current analysis uses RETRAN-02 MOD 5.1. Please provide a reference for both the generic and site specific staff approval of MOD 5.1 for the application of steam generator tube rupture analysis.

4. Provide additional discussion of why the amount of turbine runback is now assumed to be 70 percent rather than 60 percent in the previous analysis. Describe the effect of a turbine runback on the results or the analysis. Additionally, why is an immediate manual reactor trip not assumed if this provides more conservative results?

5. Provide greater detail explaining why the assumption of 102 percent initial reactor power before the steam generator tube rupture (SGTR) is more conservative than the previously assumed value of 100 percent power.

ENCLOSURE

B. Questions Regarding Operator Actions

1. As noted in Question A.2, the margin to overfill is small. What assurance will the licensee provide to the staff that demonstration runs on the overfill scenario discussed in the submittal dated November 13, 1996, will be completed for 100 percent of Byron an Braidwood operators?

2. The licensee committed to evaluate a minimum of 80 percent of the Byron and Braidwood licensed operator crews in the design basis SGTR overfill scenario, and in fact evaluated all 12 similar crews at each site. Please discuss the rationale for selecting the two licensed reactor operator crews from Byron and Braidwood for the revised SGTR overfill scenario.

3. Provide the results of a sensitivity study that would evaluate the significance of observed average response times that exceed the revised analysis response times discussed in Tables 3 and 4 of the November 13, 1996, submittal.

4. Provide the actual times for the Byron and Braidwood licensed operator crews that participated in demonstration runs for the overfill scenario discussed in the November 13, 1996, submittal.

5. Provide information regarding the time anticipated to obtain steam generator sample results. Include discussion of the effect on performance of subsequent EOP steps and any resultant effect regarding the SGTR event.