

January 8, 1991

Docket No. 50-390

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: WATTS BAR UNIT 1 - RESISTANCE TEMPERATURE DETECTOR (RTD) BYPASS
SYSTEM REMOVAL (TAC 63599)

By letter dated June 13, 1989, we transmitted the safety evaluation approving your proposed use of the Eagle-21 System, a microprocessor system to replace the originally approved RTDs. However, we have not yet completed all of our review work on this issue; the enclosure describes the additional information we need to complete the review. Mr. H. Balukjian of the Reactor Systems Branch is our reviewer.

Please respond within 60 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by

Peter S. Tam, Senior Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

cc w/enclosure:
See next page

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A PDR

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QUESTIONS ON WATTS BAR RTD BYPASS SYSTEM REMOVAL

1. In a letter from J.A. Domer, TVA, to B. J. Youngblood, USNRC, dated January 27, 1987 you presented Table 15.1-3, "Trip Points and Time Delays to Trip Assumed in Accident Analysis." This indicated that the analysis for overtemperature delta T and overpower delta T assumes a 7.0 second delay. This delay includes the RTD response time and trip circuit channel electronics delay from the time the temperature difference in coolant loop exceeds the trip setpoint until the rods are free to fall.
 - a. Your letter of March 17, 1987 shows that the new RTD response time is 6.5 seconds including electronics delay. This leaves a margin of 0.5 seconds (7.0- 6.5) from the analysis value. Is this margin sufficient to account for the accuracy of the response time test method used including repeatability and the effect of aging and drift? Please justify.
 - b. What method is used to check the RTD response time and what is the frequency of the test. Where in the Technical Specifications is this surveillance specified?
2. You have discussed three non-LOCA accidents that were analyzed for the increase in RTD response time due to the removal of the RTD bypass system and use of the new RTD temperature system. Also discuss the effect of the increase in RTD response time on the small break LOCA and large break LOCA.
3. Describe how the RTDs are calibrated for accuracy after installation and the frequency of the calibration.
4. In the letter from R. Gridley, TVA, to USNRC, dated July 20, 1988, you indicated that a "preliminary" flow measurement uncertainty (FMU) analysis has shown that the current uncertainty value of 1.8% remains applicable and was included in the safety analysis. Please provide the final FMU analysis if it is different.
5. Are there alarms and control board indicators for failed RTDs based on deviation of Tave and delta-T? If so please describe and provide the deviation in degrees F which will cause alarms and annunciation. If not, describe how the failed RTDs are detected.

Mr. Oliver D. Kingsley, Jr.

cc:

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