

TENNESSEE VALLEY AUTHORITY

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5N 157B Lookout Place

APR 24 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of
Tennessee Valley Authority

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Docket Nos. 50-327
50-328

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST TO DECLARE THE EAGLE 21 SYSTEM OPERABLE
FOR MODE 5

In support of the restart schedule for the current Unit 1 Cycle 4 refueling outage, TVA is requesting NRC's approval to consider the Eagle 21 system operable prior to NRC approval of Technical Specification Change 89-27 as it applies to several "indication only" instrument channels utilized in Mode 5. Entry into Mode 5 is currently scheduled for the morning of April 26, 1990.

The channels are inputs to the low-temperature overpressure protection system, the reactor vessel level indication system, and the refueling water storage tank level indication. The justification for this request is provided as an enclosure.

Please direct questions concerning this issue to Russell R. Thompson at (615) 843-7470.

Very truly yours,

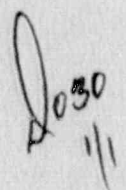
TENNESSEE VALLEY AUTHORITY



E. G. Wallace, Manager
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Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

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cc (Enclosure):

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ENCLOSURE

The request for limited scope approval to declare Eagle 21 operable in Mode 5 prior to NRC approval of Technical Specification Change 89-27 is necessary to support operability of the low-temperature overpressure protection (LTOP) system, the reactor vessel level indication system (RVLIS), and the refueling water storage tank (RWST) level indication in the main control room.

The SQN LTOP system is described in Final Safety Analysis Report (FSAR) Sections 5.2.2.4 and 7.6.7. The design, installation, and operation of RVLIS is in accordance with the requirements of NUREG-0737, Item II.F.2. The RWST level indication is a typical instrument loop utilized for technical specification surveillance.

For each of the features described above, the portion of the system utilizing Eagle 21 is essentially "indication only." There are no trip functions performed in the Eagle 21 system. The attached figure indicates the path of these signals through the Eagle 21 system.

From the corresponding field sensor (pressure, temperature, etc.), the signal is processed by an analog input module (reference Westinghouse Electric Corporation WCAP-12374, Section 3.3.1, submitted March 1, 1990). The analog input module provides the interface among process transmitters, resistance temperature detectors (RTDs), and the Eagle 21 computer hardware.

The signal is then passed to a digital filter processor (DFP). The DFP provides continuous control of online calibration to eliminate potential gain and offset drift in the analog hardware of the input module and the analog-to-digital converter located on the DFP. The values that the DFP receives for calibration references are used by the loop calculation processor (LCP) to calculate a correction factor that is applied to the input signal.

The LCP performs the conversion from engineering units to process units and performs a range check on the instrument channels discussed above.

From the LCP, the signals are passed to the digital-to-analog converter module and then to the analog output module. From this point the analog channels leave the Eagle 21 system. The analog signals are then used by the LTOP system and RVLIS (external to the protection system) to provide cold overpressure protection and indication of reactor vessel water, respectively. The RWST channel is for indication only.

In summary, the instrument signals required to support Mode 5 operation that utilize the Eagle 21 system are essentially indication only. Eagle 21 only provides signal conditioning and range check for these channels. No trip functions or protection actuations are initiated by Eagle 21 for the LTOP system, RVLIS, or RWST level indication.

ATTACHMENT

