

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
500C Chestnut Street Tower II

JAN 20 1979

Director of Nuclear Reactor Regulation
Attention: Mr. S. A. Varga, Chief
Light Water Reactors Branch No. 4
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Varga:

In the Matter of the Application of)	Docket Nos. 50-327
Tennessee Valley Authority)	50-328

Enclosed is TVA's revised response to Quality Assurance Branch question 2 on our application for the Sequoyah Nuclear Plant transmitted by your letter dated September 20, 1978, to N. B. Hughes. This revised response will be incorporated into the Sequoyah Nuclear Plant Final Safety Analysis Report by Amendment 60.

Very truly yours,

J. E. Gilleland

J. E. Gilleland
Assistant Manager of Power

Enclosure

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ENCLOSURE

RESPONSE TO QAB QUESTION 2 OF SEPTEMBER 20, 1978, LETTER

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With regard to the initial test program, our review of the test descriptions modified in amendment 48 disclosed that the description of SU-9.4, Plant Trip From 100% Power, is not sufficiently descriptive to conclude that satisfactory acceptance criteria have been established. Modify the test abstract to: (1) identify the variables or parameters to be monitored for each trip; (2) provide assurance that test results will be compared with predicted results for the actual trips to be performed (vice accident analysis predictions); and (3) provide quantitative acceptance criteria and their bases for the required degree of convergence of actual test results with predicted results for the monitored variables and parameters for each trip.

Response

The FSAR test abstract for SU-9.4 is considered to be satisfactory as revised in Amendment 48, September 15, 1977. Regulatory Guide 1.68 states that plant dynamic response should be verified to be in accordance with design for the two transients addressed by SU-9.4. This objective is satisfied by Test Objectives 1 and 2 and Acceptance Criteria 1-5 of SU-9.4A and by Test Objective 1 and Acceptance Criteria 1-3 of SU-9.4B. The primary intent of this test is to (1) observe plant dynamic response with automatic control systems configured for normal power operation, and (2) verify that sensor response times assumed in the accident analyses are conservative. The basic design function of automatic control systems is that they should prevent protective or safeguards features actuation for their associated design transient. The verification of this basic design function of automatic control systems is reflected in the Acceptance Criteria for this test in that the control systems should prevent pressurizer and steam generator safety valve lift, safety injection, and turbine overspeed. Adequate monitoring is provided during the test to measure the hot leg RTD and nuclear flux response referenced in Acceptance Criteria 2 and 3 of SU-9.4A and turbine speed referenced in Acceptance Criteria 1 of SU-9.4B.

Objective (3) of SU-9.4A and Objective (2) of SU-9.4B which refer to test data evaluation for possible improvement of automatic control system response are considered to be secondary to the primary objectives and Acceptance Criteria discussed above. The monitoring of several additional parameters during the transients is a logical use of the opportunity provided by these transients to add detailed knowledge of control systems performance. Quantitative evaluation criteria are established in the startup test instructions to be used as guides to evaluating individual parameter responses monitored during the transients.

Due to the preliminary nature of control system settings (gain, time, constants, etc.) as well as the variable nature of core decay heat with burnup, failure to satisfy an evaluation criteria does not necessarily

indicate improper control system response as would be indicated by a failure to meet a primary Acceptance Criteria discussed in the preceding paragraph. Since this secondary test objective is concerned only with control system optimization and not with the basic design function of control systems and has no impact on plant safety, it is not appropriate to include the particular variables monitored or evaluation criteria associated with this test objective in the FSAR.