

TENNESSEE VALLEY AUTHORITY

Sequoyah Nuclear Plant

P.O. Box 2000

Soddy-Daisy, Tennessee 37379

March 26, 1990

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

Gentlemen: -

In the Matter of) Docket No. 50-327
Tennessee Valley Authority)

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST FOR DISCRETIONARY ENFORCEMENT FOR
UNIT 1 LIMITING CONDITION FOR OPERATION (LCO) 3.0.4 AS APPLIED TO LCO 3.9.2

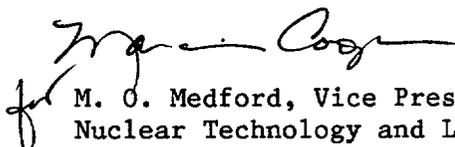
This letter documents TVA's request for discretionary enforcement for Unit 1
LCO 3.0.4 as it applies to LCO 3.9.2 because of the inoperability of
Source-Range Nuclear Instrumentation Channels N31 and N32. Discretionary
enforcement for LCO 3.0.4 to allow Unit 1 entry into Mode 6 while complying
with Action Statements a and b of LCO 3.9.2, while detensioning and removing
the reactor vessel head bolts, has been determined to have no safety
significance. Two source-range channels will be verified operable before
removal of the vessel head and prior to any core alterations. The detailed
justification for the discretionary enforcement is provided as an enclosure.

NRC approval of the discretionary enforcement for LCO 3.0.4 as applied to
LCO 3.9.2 was provided by D. M. Crutchfield of NRC to J. R. Bynum of TVA in a
telephone conference call at 2015 Eastern standard time, March 25, 1990.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY


for M. O. Medford, Vice President
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Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

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ENCLOSURE

JUSTIFICATION FOR DISCRETIONARY ENFORCEMENT FOR UNIT 1 LIMITING CONDITION FOR OPERATION (LCO) 3.0.4 AS APPLIED TO LCO 3.9.2

LCO 3.9.2 requires that at least two source-range neutron flux monitors be operable in Mode 6. Action statements are provided to address operational requirements with either one or two monitors inoperable. The bases for LCO 3.9.2 state that the redundant monitoring capability ensures the ability to detect changes in the reactivity condition of the core. LCO 3.0.4 states that entry into an operational mode or other specified condition shall not be made unless the conditions for the LCO are met without reliance on provisions contained in the action requirements.

As part of the ongoing Unit 1 Cycle 4 refueling outage activities, entry into Mode 6 (the first reactor vessel head closure bolt less than fully tensioned) is scheduled to occur at approximately 0300 Eastern standard time (EST) on March 26, 1990. Compliance with LCO 3.9.2 was initially anticipated to be maintained with the operability of Source-Range Nuclear Instrumentation Channel N31 and the backup control room source-range channel (1-RM-90-210). Source-Range Channel N32 is currently inoperable as the result of modifications to upgrade source-range and intermediate-range nuclear instrumentation for compliance with Regulatory Guide 1.97. On March 17, 1990, a work request was initiated to troubleshoot Source-Range Channel N31 because it was indicating unusually high. Source-Range Channel N31 was subsequently returned to service. On March 21, 1990, N31 failed and on March 22, 1990, it was determined that the outer shield of the detector cable was shorted to ground.

Detailed troubleshooting has confirmed that repair of the short would require the removal of the detector from its instrument well, which would significantly impact critical path activities in the area of the reactor vessel head. Since that time, all efforts have been directed toward the completion of the N32 modification to return a second source-range channel to service, and it was anticipated that this could be completed before needed for Mode 6 entry. Based on current work status however, this modification to N32 is now not expected to be complete until the afternoon of March 26, 1990, at the earliest, although efforts are continuing to expedite return to service. Action Statement 5 of LCO 3.3.1.1 is currently being complied with to ensure that adequate shutdown margin is available in Mode 5.

Problems were experienced within the last week with spiking on the backup source-range channel. The spiking was the result of plasma-arc cutting activities, which have been terminated. The backup channel is considered to be fully operable and reliable at this time.

TVA is requesting discretionary enforcement for Unit 1 LCO 3.0.4 as it applies to LCO 3.9.2. This will allow entry into Mode 6 while complying with the action statements of LCO 3.9.2. This will allow the detensioning and removal of the reactor vessel head closure bolts to proceed as scheduled in parallel with return to service of N32, thereby avoiding impact to the critical path schedule. The detensioning and removal activities are not defined as core alterations and are not capable of inducing reactivity changes in the core. The reactor vessel head will not be removed until two source-range channels are operable.

The discretionary enforcement is only required for the period of time required to change from Mode 5 to Mode 6. By technical specification definition, the transition from Mode 5 to Mode 6 occurs when the first closure bolt is less than fully tensioned. For configuration control purposes, the unit is declared to be in Mode 6 when the hydraulics of the bolt detensioning tool on the closure bolts are activated. After entry into Mode 6, the action provisions of LCO 3.9.2 will continue to be complied with as required.

The reactivity of the Unit 1 core is currently being maintained as required for Mode 6. The Unit 1 reactor coolant system is borated to 2,118 parts per million (ppm), yielding a neutron multiplication factor (k_{eff}) of 0.85, thereby ensuring sufficient shutdown margin. Dilution control is achieved by the implementation of Surveillance Instruction (SI)-214, "Uncontrolled Boron Dilution." This procedure tags out possible dilution paths as required by LCO 3.9.1. Temperature control during the transition from Mode 5 to Mode 6, and throughout Mode 6, is maintained by the residual heat removal system (shutdown cooling system) to less than 140 degrees Fahrenheit as required by technical specifications.

Nuclear instrumentation monitoring of the Unit 1 core is currently being provided by the backup control room source-range channel. This channel indicates in the backup control room, and a recorder has been added to the instrument loop to provide continuous indication in the main control room. No alarms are provided by the backup source-range channel. The high flux at shutdown alarm, which is driven by the N31 and N32 channels, would normally alert the control room to excessively high neutron flux in the core. The alarm setpoint is adjusted following shutdown to 1/2 decade above normal. The lack of this alarm for entry into Mode 6 is not significant because dilution during refueling is prevented by the administrative controls placed on potential dilution sources described above (reference Final Safety Analysis Report [FSAR] Section 15.2.4.2). Additional monitoring capabilities are available with Intermediate-Range Channel N35. Intermediate-Range Channel N36 is currently inoperable because of the Regulatory Guide 1.97 modification described above.

In summary, the requested discretionary enforcement will allow entry into Mode 6 while complying with the action statements of LCO 3.9.2 by momentarily waiving the requirements of LCO 3.0.4. The enforcement discretion is viewed to have no safety significance because the action provisions of LCO 3.9.2 will be complied with as required. Also, because the discretionary enforcement is not altering the LCO or action statement requirements other than the allowance of a mode change, the probability or consequences of a previously evaluated accident are not increased; the possibility of a new accident is not created; and the margin of safety is not reduced. Therefore, the action does not represent a significant hazards consideration. Similarly, the waiver does not involve an unreviewed environmental question because it does not increase any adverse environmental impacts, change effluents or power levels, or result in unreviewed environmental matters.