



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

January 28, 2003

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

Gentlemen:

In the Matter of ) Docket No. 50-328  
Tennessee Valley Authority )

**SEQUOYAH NUCLEAR PLANT (SQN) - UNIT 2 - REQUEST FOR  
DISCRETIONARY ENFORCEMENT FOR TECHNICAL SPECIFICATION (TS)  
LIMITING CONDITIONS FOR OPERATION (LCO) 3.3.2.9.a, ENGINEERED  
SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION FOR AUTOMATIC  
SWITCHOVER TO CONTAINMENT SUMP**

This letter documents our verbal request for discretionary enforcement for Unit 2 TS LCO 3.3.2.9.a, Engineered Safety Feature Actuation System Instrumentation for Automatic Switchover to Containment Sump. This one-time relief was needed to allow two channels less than the total number of required operable refueling water storage tank (RWST) level channels as a result of freeze conditions for a duration of 48 hours. This letter is submitted following our verbal request that was made via telephone conference conducted between approximately 1130 Eastern standard time (EST) and 1300 EST on Friday the 24<sup>th</sup> of January 2003, by representatives of TVA at SQN and Nuclear Regulatory Commission (NRC) personnel. The NRC verbally granted TVA's request, at 1252 EST, for discretionary enforcement regarding SQN TS 3.3.2.9.a during the telephone conference with one additional compensatory measure condition. This additional compensatory measure consisted of a dedicated licensed operator to be stationed to perform a manual switchover in the unlikely event that automatic switchover did not occur when required for the duration of two inoperable channels. In addition, TVA proposed other compensatory measures.

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Discretionary enforcement for a period of 48 hours was determined to have no impact on the safe operation of the SQN unit. A summary of the event leading to the request for discretionary enforcement is provided below.

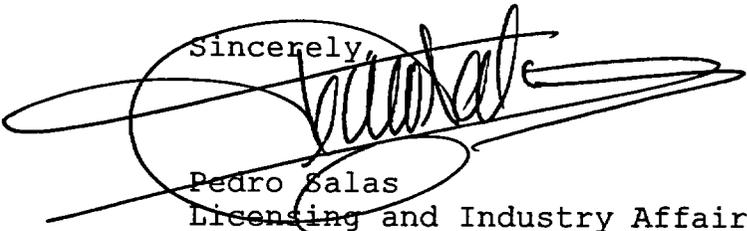
While performing the per shift surveillance requirements, the unit operator discovered the RWST level transmitter (LT) channel 2-LT-63-50 failed indicating a high level. Subsequently, the unit operator began investigating RWST LT channel 2-LT-63-52 which also indicated levels greater than 100 percent. At 0845 EST RWST LT channel 2-LT-63-52 was declared inoperable and LCO 3.0.3 was entered as a result of two inoperable RWST channels. Both inoperable RWST LT channels returned to scale at approximately 0938 EST; however, they were not considered operable at this time. Level transmitter 2-LT-63-52 was placed in bypass, by 1128 EST, in accordance with operation procedures for a channel calibration that was estimated to take 4 to 6 hours. Subsequently, LCO 3.0.3 was exited when 2-LT-63-52 was returned to operable at 1345 EST status upon performance of the channel calibration and channel check. Thus the discretionary enforcement request did not have to be invoked.

The enclosure provides the discussions and basis for granting the requested enforcement discretion in accordance with the guidance in Part 9900 of the NRC Inspection Manual. The proposed request for enforcement discretion has been reviewed and approved by the Plant Operations Review Committee and Plant Manager.

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This letter is being sent in accordance with NRC Regulatory Issue Summary 2001-05. There are no commitments contained in this submittal. Please direct questions concerning this issue to me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

Sincerely,



Pedro Salas  
Licensing and Industry Affairs Manager

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 28 day of January, 2003.

Enclosure

cc (Enclosure):

Mr. Raj K. Anand, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
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ENCLOSURE

TENNESSEE VALLEY AUTHORITY  
SEQUOYAH NUCLEAR PLANT (SQN)  
UNIT 2  
DOCKET NO. 50-328

UNIT 2 - REQUEST FOR DISCRETIONARY ENFORCEMENT FOR TECHNICAL  
SPECIFICATION (TS) LIMITING CONDITIONS FOR OPERATION  
(LCO) 3.2.2.9.a, ENGINEERED SAFETY FEATURE ACUTATION SYSTEM  
INSTRUMENTATION

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BACKGROUND

1. *The TS or other license conditions that will be violated.*

SQN TS 3.3.2.9.a requires the engineered safety feature actuation system instrumentation channels and interlocks for refueling water storage tank (RWST) level - low be operable with a trip setpoint of 130 inches and within a range of plus or minus 2.71 inches. The LCO is applicable in modes 1, 2, 3, and 4 with the following action when a channel or interlock is inoperable:

"With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition within 6 hours and the Minimum Channels OPERABLE requirement is met; one additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1."

The Total Number of Channels for this function is four. Accordingly, the Action does not provide requirements for the circumstance, of two or more channels inoperable, hence LCO 3.0.3 was entered. The requirements for LCO 3.0.3 when a LCO is not met, except as provided in the associated ACTION states that, "within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours,..."

TVA requested enforcement discretion from compliance to SQN TS 3.3.2.9.a for Unit 2. Specifically, TVA requested that the number of OPERABLE Channels be two less than the Total Number of Channels OPERABLE and one less than Minimum Channels OPERABLE for a one-time

period of 48 hours to accomplish recovery of at least one of the Unit 2 RWST level channels to operable status.

2. ***The circumstances surrounding the situation, including apparent root causes, the need for prompt action and identification of any relevant historical events.***

On Friday January 24, 2003, at 0835 Eastern Standard Time (EST) with Unit 2 operating at 100 percent, while performing the per shift surveillance requirements, the unit operator discovered the wide-range RWST level transmitter (LT) channel 2-LT-63-50 failed indicating a high level and Action 18 of TS 3.3.2.9.a was entered. Subsequently, the unit operator began investigating RWST LT channel 2-LT-63-52 which also indicated levels greater than 100 percent. The wide-range RWST LTs provide part of the logical input for initiation of automatic switchover from suction of the RWST inventory to containment sump for the predetermined low RWST setpoint. At 0845 EST RWST LT channel 2-LT-63-52 was declared inoperable and LCO 3.0.3 was entered as a result of two inoperable RWST channels. Entry into LCO 3.0.3 at 0845 EST required Unit 2 be in HOT SHUTDOWN at 1545 EST.

Immediate action was taken to determine the cause of the inoperable RWST channels and to thaw the frozen sense lines. Investigation of the failed channels found a failed heater for 2-LT-63-50 and a failed heater power supply cable to 2-LT-63-52. The failure of the freeze protection equipment resulted in the frozen sense lines. Both inoperable RWST LT channels returned to scale at approximately 0938 EST; however, the channels were not indicating correctly and were not considered operable at this time. Level transmitter 2-LT-63-52 was placed in bypass, by 1128 EST, in accordance with operation procedures and determined to need a channel calibration. TVA estimated the performance of a single channel calibration to restore a channel to operable status would expend 4 to 6 hours of time, exceeding the LCO action time requirement to be in HOT SHUTDOWN, by 1545 EST.

At approximately 1130 EST, the SQN plant manager and representatives of TVA contacted NRC to request discretionary enforcement relative to SQN TS 3.3.2.9.a to allow a one-time relief for the duration of 48 hours for two less than the total number of required operable RWST level channels.

The apparent root cause of the failed LT channels was frozen sense lines as a result of the loss of the

associated heat tracing equipment during the freezing weather condition.

By 1345 EST the procedural requirements for a channel calibration had been performed on RWST LT channel 2-LT-63-52. This channel was declared operable after performance of a channel check that showed the channel within the requirements and LCO 3.0.3 was exited. With three of the LT channels operable, Action Item 18 of TS 3.3.2 could be met prior to the need of the requested Notice of Enforcement Discretion (NOED).

TVA's enforcement discretion request regarding SQN TS 3.3.2.9.a for a duration of 48 hours was based on a similar circumstance that occurred on both Units 1 and 2 in December 1989, and the estimated time to replace instrumentation, if required to establish operable status. For the previous similar event, TVA requested discretionary enforcement for more than one inoperable RWST wide-range level indicator for each unit due to severe freezing conditions. NRC approved the 48-hour discretionary enforcement for the similar circumstances.

3. ***The safety basis for the request, including an evaluation of the safety significance and potential consequences of the proposed course of action. This evaluation should include at least a qualitative risk assessment using both risk insights and informed judgments, as appropriate.***

The RWST provides a source of borated water supply to the emergency core cooling system (ECCS) for a loss of coolant accident event. The supply of water is used during the injection mode of the event. The injection mode continues until manual actuation is taken or the defining logic automatically switches the RWST water supply to the containment sump at which time the recirculation mode is entered. The semi-automatic switchover logic is designed to prevent swapping over the ECCS pumps from the RWST to the containment sump prior to achieving a level sufficient for ECCS net positive suction head requirements. The system uses a logic combination of low level in the RWST (two out of four level channels) AND high level in the containment sump (two out of four level channels) and a safety injection signal.

At the time of the requested discretionary enforcement, two of the four RWST level channels were operable and able to meet the required safety function as necessary. All four of the containment sump level channels were also operable. The third logic input is the safety

injection signal, which is initiated by other plant monitoring equipment that was operable.

As previously stated, these RWST level channels make up part of the logic that controls the automatic switchover of the low head ECCS pump suction from the RWST to the containment sump. The reduction in the number of RWST level channels from four to two means that both the remaining RWST level channels must function for the automatic switchover. Operating instructions already require a manual switchover to the containment sump should the automatic switchover fail and operators have been trained to take this action. To offset the reduction in resiliency of the RWST level instrumentation, a dedicated operator is being used to monitor RWST level and perform the switchover to the sump should the automatic function fail. Based on this, there is no increase in risk associated with this course of action.

**4. *The justification for the duration of the noncompliance.***

As previously mentioned above, TVA had requested a 48-hour discretionary enforcement in 1989 for a similar circumstance. At present the requested duration of 48 hours, from approximately 1250 EST January 24, 2003, was based from the precedent and the estimated time, 4 to 6 hours, for establishing operability of each RWST level channel by performance of a channel calibration and channel check. The additional 36 hours were included as contingency time, if replacement of equipment was required.

**5. *The basis for the licensee's conclusion that the noncompliance will not be of potential detriment to the public health and safety and that no significant hazard consideration is involved.***

TVA has evaluated the enforcement discretion request and has determined that it does not represent a significant hazards consideration based on criteria established in 10 CFR 50.92. Operation of SQN in accordance with the proposed request for enforcement discretion will not:

- a. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The RWST level channels are not considered the initiator or precursor of any accident previously evaluated. The RWST LTs provides part of the

input logic necessary to initiate an automatic switchover of the inventory suction from the RWST to the containment sump during a loss of coolant accident event. The other required signals are made up from the containment sump level indicators and a safety injection signal. The logic necessary to complete the indication of a RWST low tank level requires two of the four channels. Operation of the remaining two operable channels would provide the necessary logic, 2-out-of-4, to complete the indication as needed. The reduction in minimum number of operable channels does not cause the malfunction of the other operable channels. Under the increased oversight for this circumstance, the probability of a failure of the low head ECCS pump suctions to switchover to the containment sump when needed is not increased.

Therefore, this relief does not involve an increase in the probability or consequences of an accident previously evaluated.

- b. Create the possibility of a new or different kind of accident from any previously analyzed.

The requested action does not physically alter any structures, systems, or components, and does not affect or create new accident initiators or precursors. The accident analysis results are unchanged. No new failures or interactions have been created. Therefore, this relief request does not create the possibility of a new or different kind of accident from any previously analyzed.

- c. Involve a significant reduction in a margin of safety.

The requested decrease in the minimum number of operable RWST level channels does not affect the margin of safety in any fission product barrier. Therefore, the proposed extension does not reduce the margin of safety.

- 6. ***The basis for the licensee's conclusion that the noncompliance will not involve adverse consequences to the environment.***

TVA has evaluated the requested enforcement discretion request against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. TVA has determined that the requested action meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9). This determination is based on the

fact that the proposed action is being requested as enforcement discretion to a license issued pursuant to 10 CFR 50, and that the change involves no significant hazards considerations. Although the proposed action involves noncompliance with the requirements of an LCO:

- (i) The proposed action involves no significant hazards consideration.
- (ii) There is no significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, since the proposed action does not affect the generation of any radioactive effluent nor does it affect any of the permitted release paths.
- (iii) There is no significant increase in individual or cumulative occupational radiation exposure. The action proposed in this request for enforcement discretion will not affect plant radiation levels, and, therefore, does not affect dose rates and occupational exposure.

Accordingly, the proposed action meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

**7. Any proposed compensatory measure(s).**

TVA proposed the following compensatory measures for the duration that the LT equipment remained inoperable during the discretionary enforcement:

1. Temporary heat would be established for the inoperable channels.
2. Temporary heat would be established for operable Unit 2 RWST LTs and the operable Unit 1 RWST LTs by 1700 EDT.
3. A fire watch would be established to monitor the additional temporary heat.
4. Unit 2 licensed operators on duty during the 48-hour duration would be briefed on the situation and required to review the procedural operation for manual RWST switchover to the containment sump.
5. All work involving the operable RWST channels for both Unit 1 and Unit 2 would be suspended until the restoration of the inoperable channels.
6. The monitoring frequency of the RWSTs' level will be increased from every 12 hours to every 2 hours.

At the request of NRC, an additional licensed operator would be dedicated, for the duration until at least one of the RWST LT channels is returned to operable status, to perform the manual switchover operation, if automatic switchover does not occur when required, in the unlikelihood of an event requiring switchover.

8. ***A statement that the request has been approved by the facility organization that normally reviews safety issues (Plant Onsite Review Committee, or its equivalent).***

The proposed request has been reviewed and approved by the Plant Operations Review Committee and the Plant Manager.

9. ***The request must specifically address which of the NOED criteria for appropriate plant conditions specified in Section B is satisfied and how it is satisfied.***

TVA evaluated the requested enforcement discretion against the criteria specified in Section B.2.1.1.a of NRC Inspection Manual Chapter 9900. This section states that the NOED is intended to avoid unnecessary transients as a result of compliance with the license condition and thus, minimize potential safety consequences and operational risks.

TVA contends that the condition satisfied this criterion. Compliance with TS 3.0.3 could have initiated an undesirable transient by requiring Unit 2 to be in HOT SHUTDOWN by 1545 EST on January 24, 2003. Reducing the total number and minimum required operable channels for a one-time duration of 48 hours, allowed continued Unit 2 operation for the additional time needed to perform the restoration of at least one of the RWST LTs to operable status. Based on the above, the criteria was satisfied.

10. ***If a follow-up license amendment is required, both the written NOED request and the license amendment request must be submitted within 2 working days. The licensee's amendment request must describe and justify the exigent circumstances (see 10 CFR 50.91(a)(6)).***

The requested discretionary enforcement would have required a one-time only TS change. However, because one of the LT channels was returned to operable status at 1345 EST and the LCO 3.0.3 was exited before 1545 EST, the requested NOED was not utilized and the TS change was no longer required.

11. For severe weather or other natural phenomena-related NOEDs, the licensee's request must be sufficiently detailed for the staff to evaluate the likelihood that the event could affect the plant, the capability of the ultimate heat sink, on-site and off-site emergency preparedness status, access to and from the plant, acceptability of any increased radiological risk to the public and the overall public benefit. In addition to items 1-10 above, as appropriate, the licensee must provide:

a. details of the basis and nature of the emergency; potential consequences of compliance with the license conditions to the plant and to the emergency situation. The licensee must provide the name, organization and telephone number of the official who made the emergency assessment.

b. status, and potential challenges to off-site and on-site power sources, and the impact of the emergency on plant safety.

c. demonstrated actions taken to avert and/or alleviate the emergency situation, including steps taken to avoid being in the noncompliance, as well as efforts to minimize grid instabilities (e.g., coordinating with other utilities and the load dispatcher organization for buying additional power or for cycling load, or shedding interruptible industrial or non-emergency loads).

The requested discretionary enforcement is not for the above circumstance.