



March 21, 1988

POLICY ISSUE
(Commission Meeting)

SECY-88-86

For: The Commissioners

From: Victor Stello, Jr.
Executive Director for Operations

Subject: UPDATED STAFF ACTIONS FOR TENNESSEE VALLEY AUTHORITY
SEQUOYAH UNIT 2 RESTART

Purpose: To provide the status of the remaining issues required to be resolved prior to restart of Sequoyah Unit 2 and to request authorization for the staff to allow restart.

Back ground: In SECY 88-82, the staff provided the Commission information on the status of allegations regarding Sequoyah's compliance with 10 CFR Part 50, Appendix R. The purpose of this paper is to provide additional information on the staff's efforts to resolve the Appendix R allegations and to inform the Commission that the remaining technical issues have been resolved.

Discussion: The NRC conducted lengthy transcribed interviews with the allegor on January 29 and February 3, 1988, and discussed the allegor's concerns informally on numerous other occasions. As a result of these interviews, the NRC developed a list of twenty-six questions which, the allegor agreed, captured the essential issues of the allegations that had been made. These questions were sent to TVA by letter dated February 26, 1988.

By letter dated February 27, 1988, TVA submitted Revision 8 to the Sequoyah Appendix R Safe Shutdown Logic Analysis. By letter dated March 2, 1988, TVA responded to the staff's twenty-six questions. The staff requested additional information on Question 12, spurious actuations, which NRC received on March 9, 1988. On March 9, 1988, the NRC held a transcribed public meeting with TVA to discuss TVA's responses to the questions. During the meeting the allegor provided questions to the staff on the matters being

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discussed, some of which were asked on the record by the staff. At the end of the meeting, the allegor was given the opportunity to provide his views for the record. After the meeting and a preliminary review of the TVA submittals, the staff concluded that there was insufficient information to resolve all the allegations received. Specifically, concerns remained in a number of areas including: spurious actuations of equipment due to cable-to-cable electrical interactions as a result of a fire; provision of a reactor coolant system letdown path to comply with Appendix R requirements; adequacy of TVA procedures for actions during a fire; and HVAC temperature considerations. To resolve these concerns, the staff conducted an Appendix R inspection at Sequoyah. A fire protection expert from the Brookhaven National Laboratory with expertise in electrical interactions and previous NRC fire protection inspections participated in the inspection.

The inspection began on March 14, 1988 and was completed on March 18, 1988. An exit meeting was held with the licensee on March 18 during which the licensee was informed of the specific inspection findings and licensee commitments for modifications and other corrective actions were obtained. The results of the inspection are summarized below and will be described in detail in an Inspection Report to be issued shortly.

Spurious Actuations Due to Cable to Cable Interactions and Reactor Coolant System Letdown Path

Appendix R requires the analysis and disposition of potential electrical or equipment interactions which could result from damage caused by a postulated fire and could affect the plant's ability to achieve and maintain safe shutdown. TVA's original analysis had determined that cable to cable interactions were not credible. This assumption was questioned by the allegor. In response to the allegations, TVA reviewed all the potential electrical interactions including those that had been dispositioned on the basis that cable to cable interactions were not credible. TVA also reviewed all HI/LO pressure interface cable routing to assure that spurious operation because of a cable to cable short will not affect the integrity of the reactor coolant system. During the inspection, the staff reviewed the interactions that had been dispositioned on the basis that cable to cable interactions were not credible and the HI/LO pressure interface.

The allegor had contended that adequate interaction studies had not been conducted between the PORV and block valve in containment. Upon review, TVA determined that a

previously unidentified potential interaction existed between the pressurizer PORV and block valve in the containment annulus. TVA agreed to install additional fire detectors and suppression in the annulus to preclude this interaction. Correction of this interaction provides for an assured reactor coolant system (RCS) letdown path for all fire interactions, which addresses another of the allegor's concerns.

Interactions were also noted to exist between the volume control tank (VCT) isolation valves and the B centrifugal charging pump (CCP) power cables. These interactions exist in 12 places throughout the auxiliary building. The inspection team walked down these interactions and one interaction in particular was of concern to the team. This is the area where the VCT isolation valve cables and the B CCP cables pass in separate vertical stacked trays above the auxiliary feed pumps. TVA has proposed and the staff has agreed that existing fire watch coverage will provide an adequate compensatory measure for these interactions.

With TVA acting to correct these interactions, TVA's dispositions regarding cable to cable interactions are acceptable.

Other Interactions

The inspection team also sampled the other electrical interactions that were dispositioned through wrapping or rerouting cable or other engineered solutions. In 5 of these interactions, the staff agreed with TVA's disposition. In the sixth interaction, the staff noted that TVA had dispositioned the interaction between the letdown valves as an incredible event based on the number of valves. The inspection team did not agree with this disposition. TVA then provided an analysis showing that if this interaction occurred, it would not result in an unsafe condition. TVA has also changed operating procedures to require operator action to terminate the associated transient. The inspection team considers this item resolved.

Operator Actions

The team reviewed operator actions required to mitigate the consequences of a fire or to take compensatory action in the event of a fire. The inspection team performed walk-through evaluations of 11 operator actions required by fire procedures. The team concluded that with some minor procedure changes which TVA agreed to perform, that the procedures and required operator actions are acceptable.

HVAC Concerns

One of the alleged's concerns dealt with the inability of the heating ventilation and air conditioning system (HVAC) to function properly during a postulated fire. HVAC data developed by TVA was reviewed by the inspection team. The inspection team found that some changes to procedures were necessary including use of blowers after some fires. TVA agreed to change the procedures and dedicate the required equipment, such as blowers, for these procedures. The staff considers this acceptable.

Harassment and Intimidation Concerns

The alleged stated that his contract had been terminated for reporting his concerns regarding Appendix R to his management, and also filed a complaint with the Department of Labor (DOL). On March 11, 1988, the Area Director of the Wage and Hour Division of DOL concluded that the alleged was discriminated against by TVA's refusal to extend or renew his contract "because of his identification of problems with TVA's Appendix R program at Sequoyah Nuclear Plant and because of his vigorous approach to the raising of nuclear safety issues." On March 16, 1988, the staff sent TVA a letter requesting a response within five days which:

1. Provides the basis for the employment action regarding the alleged; and
2. Describes the actions, if any, taken or planned to assure that this employment action does not have a chilling effect in discouraging other licensee or contractor employees from raising safety concerns.

The staff does not, however, regard this as a restart issue.

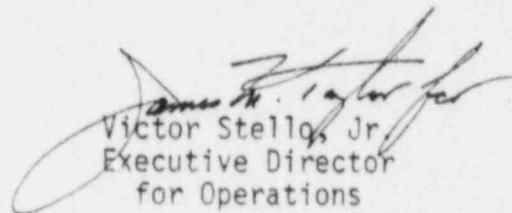
Conclusions:

TVA has completed the Appendix R modifications identified as necessary by the inspection team. The staff has inspected the modifications and found them acceptable. TVA is making the necessary procedure changes and the staff will review the procedure changes necessary for restart by March 23, 1988. The staff has concluded that with the completion of the modifications and procedure changes, the staff will have reasonable assurance that Sequoyah Unit 2 is meeting all applicable Appendix R requirements.

With the resolution of the Appendix R issue, the staff considers that all of the significant restart issues have been resolved. The staff has completed its work on Supplement 2 to the Volume 2 Safety Evaluation of the Nuclear Performance Plan and it will be issued this week. There are no open restart items in the evaluation. TVA is resolving a few remaining issues that it has determined must be resolved prior to restart. The staff expects these issues to be resolved by March 23. At that point, upon receipt of the staff's authorization, TVA will begin boron dilution and other steps towards criticality which should take about four days.

Recommendation:

The Commission authorize the staff to permit TVA to restart Sequoyah Unit 2 now that the staff is satisfied that all open issues have been resolved and Mode 3 evolutions have been successfully completed.


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