

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 14, 1982

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Ms. Adensam:

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

We are approaching the end of Sequoyah Nuclear Plant, unit 1, cycle 1 operation. The present shutdown date for beginning the outage for refueling operation is September 17, 1982. This date is subject to change depending on our ability to achieve or exceed a projected operating capacity factor to reach the licensed exposure window (14600 - 15600 MWd/MTU). The tentative date for startup following the first refueling outage, based on the September 17, 1982 shutdown is December 30, 1982.

As part of the reload licensing effort, we have considered several improvements for the Sequoyah Nuclear Plant unit 1, cycle 2 operations. We have decided to request approval of changes for the following areas:

- (1) Utilization of Relaxed Axial Offset Control (RAOC) instead of Constant Axial Offset Control.
- (2) Utilization of $F_{\Delta H}$ technical specification limit with a .3 multiplier.
- (3) Utilization of $F_Q(Z)$ surveillance technical specification instead of $F_Q(Z)$ surveillance.

Enclosed is information related to each of the proposed changes for the Sequoyah Nuclear Plant unit 1, cycle 2 operations. This information is being provided in advance of our request for a license amendment for Sequoyah Nuclear Plant unit 1, cycle 2 operations.

We request that you review our letter at your earliest convenience, and provide us with any questions related to the proposed changes.

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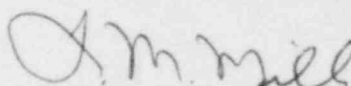
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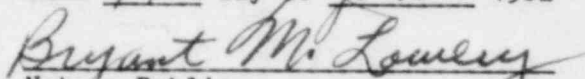
If you have any questions concerning this matter, please get in touch with J. E. Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 14th day of June 1982


Notary Public
My Commission Expires 4/8/86

Enclosure

cc: U.S. Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

• ENCLOSURE
PROPOSED CHANGES FOR THE UNIT 1, CYCLE 2 OPERATIONS
SEQUOYAH NUCLEAR PLANT

Relaxed Axial Offset Control (RAOC)

We propose to change the method of power distribution control from Constant Axial Offset Control (CAOC) to Relaxed Axial Offset Control (RAOC) beginning with Sequoyah unit 1, cycle 2. RAOC provides the benefits of CAOC in terms of meeting the LOCA peak kW/ft limits and core protection requirements while widening the ΔI control band, particularly at reduced power. As part of the plant specific reload cycle, we anticipate that revisions may be required in the following functional areas of licensing documentation:

- (1) Nuclear Design - Those design parameters that are affected by the incorporation of RAOC will be examined.
- (2) Thermal Hydraulic Design - Those thermal hydraulic parameters impacted by the control strategy by the incorporation of RAOC will be examined.
- (3) Accident Analyses - A discussion of the affect of safety analyses, if any, resulting from the incorporation of RAOC will be provided.

A presentation was made to the NRC on June 4, 1980, by Westinghouse on the utilization of RAOC. Although the plant under consideration at that time was Millstone 2, Westinghouse has stated that the basic methodology presented is applicable to Westinghouse plants--specifically, Sequoyah Nuclear Plant. The presentation was made by B. Alsop of Westinghouse Nuclear Fuel Division, and was attended by D. Fieno and M. Dunnenfeld of the NRC, Core Performance Branch, along with other NRC representatives. NRC has issued a Safety Evaluation Report for Millstone 2, cycle 4, Amendment 61 that was dated October 6, 1980. The NRC SER approved the use of RAOC methodology for the Millstone plant.

$F_Q(Z)$ Surveillance

The $F_Q(Z)$ surveillance will be proposed to replace the $F_{xy}(Z)$ surveillance. The $F_Q(Z)$ surveillance will allow credit to be taken for the actual measured power distribution. Surveillance to verify safe operation below $F_Q(Z)$ limits is accomplished by periodically measuring $F_Q(Z)$ with a full core flux map taken under equilibrium conditions. A $W(Z)$ function to account for transients is introduced to increase the measured $F_Q(Z)$. The product of $F_Q(Z)$ multiplied by the $W(Z)$ function is then compared to safety limits.

The methodology for $F_Q(Z)$ surveillance was presented to the NRC on February 25, 1981, by J. R. Secker of the Westinghouse Nuclear Fuel Division and was attended by M. Dunnenfeld, NRC-NRR and other NRC representatives. The methodology is similar to the base load-radial burn down time technical specification approved for Turkey Point units 3 and 4 in SER Amendment 80 for license DPR-31 and SER Amendment 41 to license DPR-41.

F_{ΔH} Technical Specification With .3 Multiplier

The current F_{ΔH}^{LIM} technical specification limit is specified by the following:

$$F_{\Delta H}^{LIM} = 1.55 (1.0 + 0.2(1-P))$$

We propose to utilize the F_{ΔH} technical specification limit defined by the following:

$$F_{\Delta H}^{LIM} = 1.55 (1.0 + .3(1-P))$$

Temperature limits and axial offset DNB limits for the revised F_{ΔH} parts power multiplier of 0.3 will be determined and provided at a later date.