

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
1630 Chestnut Street Tower II

April 24, 1985

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

Dear Ms. Adensam:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

Please refer to TVA's letter dated April 9, 1985, regarding the certification of the Watts Bar Nuclear Plant Unit 1 Technical Specifications.

Included in the referenced letter was notification of two revised FSAR analyses which are being performed by Westinghouse Electric Corporation (W). These two issues were briefly discussed between TVA and NRC representatives during a meeting on April 10, 1985. TVA proposed that the low-power license be conditioned to allow for submittal of the revised analyses to NRC after fuel load; however, since the April 10th meeting, W has completed one (centrifugal charging pump miniflow analysis) of the two analyses. A discussion of the analysis results including a required technical specification revision is enclosed along with the W letter of notification. Also enclosed is a proposed license condition for the remaining analysis (uncontrolled RCCA withdrawal analysis) since it is anticipated that the analysis will not be completed before issuance of the low-power license.

If you have any questions concerning this matter, please get in touch with D. B. Ellis of my staff at FTS-858-2681 in Chattanooga.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domer

J. A. Domer
Nuclear Engineer

8504300363 850424
PDR ADOCK 05000390
A PDR

Sworn to and subscribed before me
this 24th day of April 1985.

Bryant M. Lowery
Notary Public

My Commission Expires 4/2/86

Enclosures

cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

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Boo!
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Westinghouse
Electric Corporation

Water Reactor
Divisions

Box 305
Savannah Plant, Savannah, GA 31406-0305

April 19, 1985

TVA Contract
#71062-54114-1
WAT-D-6512
NS-OPLS-OPL-85-175
S.O. WAT/WBT-4705

Mr. J. A. Raulston
Chief Nuclear Engineer
Tennessee Valley Authority
400 W. Summit Hill Drive, W10 C126
Knoxville, Tennessee 37902

Ref: WAT-EAN-2092

Dear Mr. Raulston:

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
UNITS NUMBERS 1 AND 2
CENTRIFUGAL CHARGING PUMP (CCP) MINIFLOW
EVALUATION/ANALYSIS

This evaluation was made to determine the impact of operating the centrifugal charging pump with the miniflow valves open at all times. Specifically, the probable impact on the Chapter 15 Steamline Break Analysis was evaluated and it has been determined that the change in safety injection flow rates has a minimal impact. The resulting statepoints are very similar to the previous BIT Removal Analysis. Therefore, the limiting DNBK will be very close to the results of the BIT Removal Analysis and will not change the conclusions presented in the PSAR for the hypothetical Steamline Break.

The effect of open miniflow valves during a large break LOCA is to decrease the charging/safety injection flow from 346 to 315 GPM. This is reflected in the attached Technical Specification revision to 3/4 5.2 ECCS Subsystems - Tavg 2 350 F, Surveillance Requirements 4.5.2.h.1.a, page 3/4 5-8. The results of the limiting case large break LOCA ($C_p=0.6$ DECLG, perfect mixing) analysis presented in the Watts Bar PSAR are not affected by the CCP miniflow. Watts Bar remains in compliance with 10 CFR50.46 requirements during operation with the CCP miniflow valves open.

If you have any questions or comments regarding the preceding, please contact
Larry Tomasio at 412 - 374-4715.

Very truly yours,

E. A. Novotny
E. A. Novotny, Manager
Tennessee Valley Authority Projects

L. V. Tomasio/pj
Attachment

J. A. Raulston, 3L, 3A

cc: L. N. Mills, 1L, 1A
J. Larkin, 1L
I. R. Williamson, 1L
R. G. Williams 1L

Ref: 3/4 5.2

EMERGENCY CORE COOLING SYSTEMS

FINAL DRAFT

SURVEILLANCE REQUIREMENTS (Continued)

- h. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:
- 1) For centrifugal charging pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 315 gpm, and
 - b) The total pump flow rate is less than or equal to 588 gpm.
 - 2) For Safety Injection pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 482 gpm, and
 - b) The total pump flow rate is less than or equal to 660 gpm.
 - 3) For RHR pump lines, with a single pump running, the sum of the injection line flow rates is greater than or equal to 3376 gpm.

EMERGENCY CORE COOLING SYSTEMS

FINAL DRAFT

SURVEILLANCE REQUIREMENTS (Continued)

- h. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:
 - 1) For centrifugal charging pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to ~~346~~ ³¹⁵ gpm, and
 - b) The total pump flow rate is less than or equal to 568 gpm.
 - 2) For Safety Injection pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 462 gpm, and
 - b) The total pump flow rate is less than or equal to 660 gpm.
 - 3) For RHR pump lines, with a single pump running, the sum of the injection line flow rates is greater than or equal to 3976 gpm.

Uncontrolled RCCA Withdrawal

On July 9, 1984, Westinghouse Electric Corporation (W) submitted a letter to NRC (E. P. Rahe, Jr., to D. Eisenhut-NSTA 84 003), documenting the meeting held with NRC to discuss the inconsistency between the FSAR safety analysis performed on plants utilizing W NSSS systems and the standard technical specifications (TS). This inconsistency involved the number of reactor coolant pumps operating in mode 3. Uncontrolled RCCA withdrawal is the only analysis impacted by this inconsistency. At that time W was pursuing generic methodology changes to the accident analysis to resolve this issue.

In the January 22, 1985 submittal to NRC (E. P. Rahe, Jr. to H. Thompson-NS NRC 85 2997), W concluded that updated methodology was not feasible. Specifically, the high reactivity insertion rates used in the current methodology could not be reduced enough to yield acceptable results on a generic bounding basis. Subsequent to this, TVA entered into contractual discussions with W to have a plant specific analysis performed on Watts Bar Nuclear Plant (WBN) to reduce the number of RCPs assumed in the uncontrolled RCCA withdrawal analysis. Based on a similar analysis performed on Diablo Canyon, W has assured us the number of RCPs can be reduced to two. This is consistent with WBN draft TS 3.4.1.2.

The W analysis is to be formally documented to TVA by March 9, 1985. TVA will submit this documentation for NRC review by May 14, 1985. This will allow sufficient time for NRC review prior to the unit entering a mode for which uncontrolled RCCA withdrawal is considered a creditable event (mode 3). Mode 3 is presently scheduled for May 2, 1985. TVA and W personnel will be available to support the staffs review if necessary.

Since this analysis will not be completed until after fuel loading of unit 1, a license condition covering the submittal of the analysis documentation to NRC would be prudent. This allows TVA to certify the TS based on the license condition prior to fuel load. Below is suggested wording for the license condition:

RCCS Rod Withdrawal Analysis

The licensee will submit to NRC documentation of the revised RCCA Rod Withdrawal Analysis according to the schedule contained in the letter from J. A. Domer to E. Adensam dated April 24, 1985.

Summary

TVA believes it is in the interest of safe and efficient plant operation to have this analysis performed at this time. TVA further believes that this analysis should prohibit the plant from entering into an operational mode for which the associated TS or event is not applicable. Based on discussion with NRC Division of Licensing Personnel, we believe a license condition is the appropriate method to handle these issues.