

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

February 12, 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 the Application of ) Docket Nos. 50-390  
Tennessee Valley Authority ) 50-391

Enclosed for NRC review is information concerning Low Temperature Overpressure Protection and BOP Setpoint Methodology for Watts Bar Nuclear Plant. This information should resolve the open Instrumentation and Control Systems Branch concerns designated as open items 28 and 29 in the draft Safety Evaluation Report.

If you have any questions concerning this matter, please get in touch with D. P. Ormsby at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager  
Nuclear Regulation and Safety

Sworn to and subscribed before me  
this 12<sup>th</sup> day of Feb 1982

Bryant M. Lowery  
Notary Public

My Commission Expires 4/4/82

Enclosure

cc: U.S. Nuclear Regulatory Commission  
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

*Drawing To: PM*  
*Boo!*  
*5/11*  
*Aperture Card Distribution*

ENCLOSURE  
Watts Bar Nuclear Plant Units 1 and 2  
ICSB ITEMS 28 AND 29

Low Temperature Overpressure Protection System

TVA will install switches on the main control board for the operator to manually arm this system. The manual arming will be written into the operating procedure for the operator to manually arm the system when the coolant temperature is equal to or below the setpoint (to be established when design is completed) and before beginning the filling operation. The operator will have approximately one hour or longer from the time he begins to fill the system until the system becomes solid. The system arming will be reset when the system is brought back up above the system temperature setpoint for arming.

## BOP Setpoint Methodology

The methodology used for determining balance of plant (BOP) engineered safeguard setpoints is designed to allow sufficient margin between the process setpoint and the safety limit provided by safety analysis, to ensure the monitored parameters never reach the safety limit.

Error allowance is made for the following effects as appropriate for the particular instrument under consideration:

- I Inaccuracy inherent to process parameter
- II Primary element accuracy
- III Sensor
  - a. Calibration accuracy
  - b. Pressure and temperature effects
  - c. Drift
  - d. Severe environment allowance
- IV Rack mounted electronics
  - a. Calibration accuracy
  - b. Comparator setting accuracy
  - c. Temperature effects

The instrument loop statistical allowance is calculated by taking the square root of the sum of the squares of the various errors. Errors that are interactive are added arithmetically into groups before squaring. The errors that are independent are squared individually. The statistical allowance must be smaller than the margin between the process setpoint and safety analysis' limit.

Attached is a table providing the numerical allowances for the BOP setpoints.