

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

September 17, 1984

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 June 11, 1984 which, as requested by NRC, provided supplemental information on various audit findings identified by NRC during the February 14-16, 1984 audit of the Watts Bar Nuclear Plant electrical equipment qualification files. This request for additional information was a result of an informal TVA/NRC meeting of April 18, 1984 held to discuss TVA's responses to the audit findings.

During the April 18, 1984 meeting, NRC, as a follow-up to TVA's response to an audit finding concerning the qualification of Chicago Fluid Power main steamline isolation valve (MSIV) actuators, requested that TVA provide assurance that operator actions will not be based upon indications from the MSIV limit switches. (TVA had previously indicated that the limit switches did not need to be qualified since they are not required to operate the MSIVs.)

TVA has completed its evaluation of having unqualified MSIV limit switches and has concluded that while the limit switches are desirable equipment, they are not essential equipment. The enclosure to this letter provides the details of our evaluation. Please note that the desirability for qualified limit switches will be reevaluated upon resolution of the valve room superheat steamline break issue. Notification will be provided should TVA elect to pursue qualification of these limit switches.

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Director of Nuclear Reactor Regulation

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

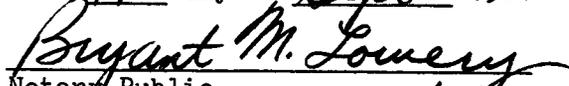
Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 17th day of Sept 1984



Notary Public

My Commission Expires 4/8/86

Enclosure

cc: U.S. Nuclear Regulatory Commission (Enclosure)

Region II

Attn: Mr. James P. O'Reilly Administrator

101 Marietta Street, NW, Suite 2900

Atlanta, Georgia 30323

ENCLOSURE

WATTS BAR NUCLEAR PLANT
ENVIRONMENTAL QUALIFICATION OF CHICAGO FLUID POWER
MSIV LIMIT SWITCHES

NRC Question (April 18, 1984)

TVA needs to provide assurance that operator actions will not be based upon indications from the MSIV limit switches.

TVA Response

A certain category of small steamline breaks can result in significant superheating. If the break results in a steamline differential pressure greater than or equal to 100 psi, then an SI signal will be generated and superheating can occur due to the break. Before superheating can be generated, significant tube uncovering must take place. This will take approximately two to three minutes to occur. For breaks that also generate an MSIV closure signal, the MSIVs will close before significant change in the environment due to superheating. For smaller breaks, no MSIV closure signal will be generated; however, the break flow will be choked regardless of the number of steam generators supplying the break. The overcooling transients resulting from this class of small breaks are bounded by the FSAR large break analysis.

The harsh environment caused by superheating can lead to failure of the MSIV limit switches in the affected valve room. Failure would be limited to the limit switches on only two MSIVs. The limit switches provide indication only; they do not perform any control circuit functions.

The operator is required to verify MSIV isolation as part of the response to a steamline break. If it has not been actuated, as in the case of a small break, manual initiation is required. The MSIV isolation signal generation is indicated in the control room. The operator would verify the presence or absence of an MSIV isolation signal in addition to verifying valve closure. Verification of valve closure can be accomplished by several parameters in addition to the MSIV limit switches. These include steam generator pressure and level, RCS cold leg temperature indication, steamline flow, and auxiliary feedwater flow. The MSIV limit switches are not the sole means nor are they a necessary means of verifying steamline isolation.

The inherent design of the MSIVs makes it unlikely that a valve would remain open in the presence of an MSIV isolation signal. However, the failure of the operator to recognize an open MSIV is of no consequence. As stated above, for breaks that do not generate an MSIV isolation signal, the break flow will be choked regardless of the number of steam generators supplying the break. This condition is bounded by the FSAR large steamline break analysis. For breaks that do generate an MSIV isolation signal, no more than one steam generator can blowdown with the failure of a single MSIV. This condition is bounded by the FSAR large steam line break analysis.