

TENNESSEE VALLEY AUTHORITY REGION II  
CHATTANOOGA, TENNESSEE 37401 ATLANTA, GEORGIA  
400 Chestnut Street Tower II

88 SEP 27 A 7: 52  
September 22, 1983

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 1 - NRC-OIE REGION II INSPECTION REPORT  
50-390/83-26 - RESPONSE TO DEVIATION 390/83-26-01

The subject inspection report cited TVA with a deviation concerning the preoperational testing of the Auxiliary Control Air System in compliance with the requirements of Regulatory Guide 1.80, "Preoperational Testing of Instrument Air Systems." Enclosed is our response to the alleged deviation.

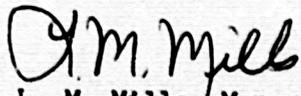
As stated in the enclosure, it is TVA's position that the preoperational test in question satisfies the requirements of Regulatory Guide 1.80, as applicable.

As discussed with NRC-OIE Inspector P. E. Fredrickson on September 15, 1983, we request that NRC review of TVA's position be performed in an expeditious manner to ensure prompt resolution of this matter.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager  
Nuclear Licensing

Enclosure

cc (Enclosure):

Mr. Richard C. DeYoung, Director  
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U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1  
NRC-OIE REGION II INSPECTION REPORT  
RESPONSE TO DEVIATION 50-390/83-26-01

Deviation - 50-390/83-26-01

FSAR Section 9.3.1.4 states that preoperational testing of the compressed air system is to be performed as prescribed in Regulatory Guide (RG) 1.80, Preoperational Testing of Instrument Air Systems. Regulatory Guide 1.80 states that a loss of instrument air supply test be conducted on all branches of the system simultaneously, if practicable, or on the largest number of branches of the system that can be adequately managed.

Contrary to the above, a loss of instrument air supply test is being conducted on each valve of the system individually per preoperational test TVA-27B, Auxiliary Control Air System.

Response

TVA denies the alleged deviation.

Change sheet CS-19 was submitted to TVA's Division of Engineering Design (EN DES) to allow for local loss of air tests for individual valves where required. During a joint telecon on July 22, 1983, between NRC and TVA representatives, Inspector M. Thomas (NRC-OIE Region II) questioned whether the proposed local air tests were in compliance with RG 1.80 requirements, specifically paragraphs C.8 and C.9 which involve rapid and gradual loss of air pressure tests. Although we stated our position that local loss of air tests comply with RG 1.80 during the telecon, it was agreed that this position would be formally submitted to the NRC for their review.

Regulatory Guide 1.80, Paragraph C.8.a

Conduct a loss-of-instrument-air-supply test on all branches of the system simultaneously, if practicable, or on the largest number of branches of the system that can be adequately managed as follows:

Before the test, place the valves to be tested, except for those valves which fail as is, in a position other than the failed position. Maintain the rest of the plant in as close to normal operating condition as is possible. (It should be noted that not all valves can be placed in the required positions because of operating procedure requirements or personnel or equipment safety factors.)

TVA Comment:

Individual valves or small groups of valves located downstream of a common branch isolation valve are tested in lieu of a total system loss of air test. In cases where individual valves are tested, they are tested under conditions which meet or exceed the loss of air conditions which would otherwise be imposed based on a total system depressurization (see TVA Comment, below). The remainder of the system is maintained in a normal operating mode. We believe that these test provisions are in compliance with paragraph C.8.a.

Regulatory Guide 1.80, Paragraph C.8.b

Shut off instrument air supply in a manner that would simulate an instrument air pipe break and verify the movements of the affected components. Also verify the adequacy of the various feeders or branches to sustain an adequate share of the decaying air supply as required by the operational mode; i.e., verify that branches of smaller pipe sizes are not starved by flow to branches of larger capacity.

TVA Comment:

In cases where individual valves are tested, the air supply source is disconnected at the branch or root isolation valve upstream of the valve actuator and any valve controllers (e.g., solenoid operators, positions, accumulators, filters, etc.). This method assures a "total loss of air" valve response at a maximum rate of depressurization. The requirement for verifying the adequacy of branches to maintain an adequate share of the decaying air supply is not applicable to the WBN (safety) auxiliary control air system since the auxiliary air system, including all valves in the system, does not depend on any part of the decaying air supply during any operational mode to perform its intended function, including valves failing to the proper position. We note that all valves are required (and tested) to fail in the correct position regardless of whether the pipe rupture is remote with respect to the tested valve or directly at the local air supply source. We also note, for information, that the trained separation and redundancy features of the WBN auxiliary air system are such that no single pipe failure or rupture would compromise its intended safety function.

Based on the above, we believe that the current test provisions are in compliance with paragraph C.8.b.

Regulatory Guide 1.80, Paragraph C.9

Rerun the test outlined in paragraph C.8 with the exception that, during this test, shut off instrument air supply very slowly to simulate the loss of instrument air by moisture freezing and plugging the main supply line.

TVA Comment:

Our test provisions require that the total air supply to individual valves or small groups of valves be shut off in a manner such that depressurization requires a minimum of 30 minutes. Since paragraph C.9 regarding depressurization time (i.e., "very slowly") is otherwise unqualified, we feel that this test provision is in compliance and adequately simulates valve response to a loss of air condition due to line freeze up.

In closing, it is our position that preop test TVA-27B as modified by change CS-19 complies with RG 1.80. We also note that CS-19 has subsequently been approved to enable progression of test TVA-27B during the plant hot functional phase.