

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

Richard T. Purcell
Site Vice President, Watts Bar Nuclear Plant

FEB 18 1998

10CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

**WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - TECHNICAL SPECIFICATION
(TS) CHANGE NO. 97-012 - STEAM GENERATOR ATMOSPHERIC DUMP VALVES -
ACTION STATEMENT FOR INOPERABLE SAFETY-RELATED AIR SUPPLY**

In accordance with the provisions of 10 CFR 50.90, TVA is submitting a request for an amendment to WBN's license NPF-90 to change the TSs for Unit 1. The proposed amendment would change the Atmospheric Dump Valves (ADV) section (LCO 3.7.4) to provide a new TS CONDITION and ACTION to address a potential situation involving one train of ADVs (2 valves) being made inoperable due to an inoperable safety-related air supply.

In addition, the proposed TS change corrects an ACTION statement for LCO 3.7.4 when two or more ADVs are INOPERABLE, consistent with the intent of the ACTION as described in the TS BASES and consistent with an industry proposed change to the generic standard technical specifications. TVA took interim actions to inform shift personnel of this situation and the appropriate actions to be taken in accordance with the Technical Specification Bases.

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TVA has determined that there are no significant hazards considerations associated with the proposed change and that the change is exempt from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). The WBN Plant Operations Review Committee and the WBN Nuclear Safety Review Board have reviewed this proposed change and have determined that operation of WBN Unit 1 in accordance with the proposed change will not endanger the health and safety of the public. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee State Department of Public Health.

Enclosure 1 to this letter provides the description and evaluation of the proposed change. The enclosure includes TVA's determination that the proposed change does not involve a significant hazards consideration, and is exempt from environmental review. Enclosure 2 contains copies of the appropriate Unit 1 TS pages marked-up to show the proposed change and forwards the revised TS pages which incorporate the proposed change.

TVA requests that the revised TS be made effective within 30 days of NRC approval. If you have any questions about this change, please contact P. L. Pace at (423) 365-1824.

Sincerely,



R. T. Purcell

Enclosure

cc: See page 3

Subscribed and sworn to before me
on this 18th day of February 1998

E. Jeannette Jorg
Notary Public

My Commission Expires June 27, 2001

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cc (Enclosures):

NRC Resident Inspector
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

Mr. Robert E. Martin, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW,
Suite 23T85
Atlanta, Georgia 30303

Mr. Michael H. Mobley, Director
Div. of Radiological Health
3rd Floor
L & C Annex
Nashville, Tennessee 37243

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT (WBN)
UNIT 1 - DOCKET NO. 390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE TS-97-012
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE

I. DESCRIPTION OF THE PROPOSED CHANGE

The proposed amendment would revise Watts Bar Nuclear Plant (WBN) Technical Specification (TS) LCO 3.7.4 and associated Bases to address a new condition (CONDITION B) and associated actions in which one train (two valves) of Steam Generator Atmospheric Dump Valves (ADV), although functional, would be considered technically INOPERABLE in the event one train of the auxiliary control air system (ACAS) was out of service. The action required for the new condition is to restore the ADV lines to OPERABLE status within 72 hours.

Specifically, as described in Enclosure 1, LCO 3.7.4 would be revised to add the following new CONDITION B and associated REQUIRED ACTION and COMPLETION TIME:

CONDITION -	"B. One train (two ADV lines) inoperable due to one train of ACAS inoperable."
REQUIRED ACTION	"B.1 Restore ADV lines to operable status."
COMPLETION TIME	"72 hours"

The Tech Spec Bases would be revised accordingly and other items renumbered.

In addition, the proposed amendment would make a correction to the REQUIRED ACTION for CONDITION B (new CONDITION C) to clarify that the required action for two or more inoperable ADV lines (with the exception of new CONDITION B) is to restore all but one ADV line to operable status. The current REQUIRED ACTION for CONDITION B incorrectly states that one ADV line must be restored to operable status. This proposed clarification is more conservative than the current literal ACTION statement and is consistent with the intent of the ACTION as described in the TS BASES and consistent with an industry proposed change to the generic standard technical specifications (TSTF No. 100).

Specifically, as described in Enclosure 1, LCO 3.7.4 would be revised so that current CONDITION B becomes CONDITION C and reads as follows:

CONDITION	"C. Two or more required ADV lines inoperable for reasons other than Condition B."
REQUIRED ACTION	"C.1 Restore all but one ADV line to OPERABLE status."

II. BASES FOR THE PROPOSED CHANGE

ADDITION OF NEW CONDITION B TO ADDRESS INOPERABLE ACAS

The four steam generator (SG) ADVs, one per SG, provide a method for cooling the RCS to the residual heat removal (RHR) entry conditions should the preferred heat sink via the steam dump system to the condenser not be available. The ADVs may also be required to meet the design cooldown rate during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the steam dump system. The design basis of the ADVs is established by the capability to cool the unit to RHR entry conditions with an ADV capacity sufficient to achieve a cooldown rate of 50°F/hr throughout the cooldown with 2 ADVs in service. The SGTR accident is the limiting event for the ADVs, recovery from which requires the operator to perform a limited cooldown to establish adequate subcooling and subsequent RCS depressurization in order to terminate the primary to secondary break flow into the ruptured steam generator. In the event the preferred condenser steam dump system is unavailable to cool the RCS following a SGTR, two ADVs are assumed available to perform the cooldown.

The four steam generator atmospheric dump valves (ADV) are supplied by the normally aligned control air system and by the backup safety related Train A and Train B auxiliary control air system (ACAS). Two valves receive Train A air and two valves receive Train B air. With one train of ACAS out of service, two ADVs must be declared technically inoperable, although they would still be expected to be functional and capable of performing their design cooldown function from the normal air supply.

Under current Technical Specification LCO 3.7.4 and its associated Bases, with one inoperable ADV, restoration is required within 7 days. If two or more ADV lines are inoperable, all but one ADV must be restored to operable status within 24 hours. The WBN Technical Specifications currently do not provide an LCO for the ACAS and do not recognize the specific condition where a train of ADVs (2 valves) are functional but technically inoperable due to an inoperable train of ACAS. As a result of this situation, LCO 3.7.4 Condition B has the undesired effect of limiting (to 24 hours) the amount of repair, trouble-shooting, or preventive maintenance that may be performed on an ACAS train without a forced plant shutdown with no corresponding significant benefit to the public health and safety.

The proposed change to the Technical Specifications would address this specific case, and require action to restore operability of the ADV lines within 72 hours, instead of 24 hours. The 72 hour completion time is reasonable since alternate means are available to operate the ADVs.

Alternate Means of ADV Operation

With one train of the ACAS out of service, two ADVs receiving essential air from that ACAS train must be declared technically inoperable. However, additional redundant and diverse equipment is available and expected to remain functional to ensure the "inoperable" ADVs may still accomplish their design cooldown function following an accident. As discussed in the current Bases for LCO 3.7.4, during normal operation, the ADVs are aligned to the normal instrument air supply (non safety-related control air system) and would be expected to be functional and capable of performing their cooldown function, even with a loss of the ACAS, provided normal power supplies are available. In addition to the normally aligned control air system supply for the ADVs, the ADVs are designed to be manually operated with the valve hand wheel, or may be operated by manually aligning a bottled nitrogen system to the valve operators in the event normal and emergency air supplies are lost. Each ADV is provided with a main and alternate nitrogen bottle designed to operate the valves in the event of loss of air. At minimum pressure each nitrogen bottle can cycle an ADV five times. Therefore, in the event two ADVs are rendered technically inoperable due to a loss of one ACAS train, they are still designed and expected to remain functional and could be placed in service and used to cool the steam generators, if necessary, in the event of an accident.

These provisions for alternate means of ADV operation are currently addressed in applicable station operating procedures including Abnormal Operating Instruction (AOI-10), "Loss of Control Air," and System Operating Instruction (SOI)- 1.01, "Main Steam". In AOI-10, Section 3.3 (Loss of Normal Control Air in Modes 1-4), action is required to ensure auxiliary air [from the ACAS] is established or actions taken in accordance with Section 3.2 (Loss of Auxiliary Air). Since the normal method of plant cooldown using the condenser steam dump system will be unavailable upon loss of air, Section 3.2 directs the operator to ensure RCS temperature control is maintained by the SG ADVs, or if not, to locally control any SG ADV affected by the loss of air in accordance with SOI-1.01. In Section 8.2 of SOI-1.01 (Infrequent Operations - Local Operation of SG ADVs), local operation of the ADVs is specifically addressed via a wall mounted controller when air is available, the valve handwheel when air is unavailable, or local operation with the emergency control station using nitrogen.

Failure of One Train of ADVs to Function

In the unlikely event two ADVs rendered inoperable by an inoperable ACAS train are unable to be operated locally, the other two ADVs remain available and are capable of performing their design function, assuming no additional single failure. As indicated in the Applicable Safety Analysis of the Technical Specification Bases for LCO 3.7.4, two valves are adequate to cool the unit to the RHR entry conditions subsequent to accidents accompanied by a loss of offsite power. In addition, the main steam safety valves (MSSVs) will function to provide system over pressure protection if the ADVs fail to function, and the preferred condenser steam dump valves will normally be available for plant cooldown.

The Technical Specifications currently allow two or more ADVs to be completely out of service for 24 hours, based on the low probability of an event occurring during the period which would require use of the ADVs, and based on availability of the condenser steam dump valves and the MSSVs. The effect of the proposed amendment is to increase the completion time for restoration of one train of ADVs made inoperable by an inoperable train of ACAS from 24 to 72 hours. This proposal does not significantly reduce any safety margins since the probability of an event occurring during the 72 hour period is still small. Further, the proposed 72 hour completion time is consistent with the most limiting LCO (LCO 3.7.5) for other systems and equipment which receive essential air via the ACAS. LCO 3.7.5 provides 72 hours for restoration of one train of auxiliary feedwater (AFW) which may be rendered inoperable due to a loss of ACAS supplies to the AFW level control valves.

In addition, the time extension from 24 to 72 hours for which a single failure of the ACAS is not assumed is reasonable. Under the WBN Maintenance Rule Program, the reliability criteria for the ACAS is: not more than one functional failure per train per 24 months. An ACAS functional failure is defined as a train failure resulting in the inability to provide the required volume of air to the end devices. For the period January 1996 through December 1997, WBN has experienced no functional failures of the ACAS. Reliability of both the control air system (CAS) and the ACAS is monitored through periodic testing of the systems. Tests include performance testing of the ACAS compressors, ASME Section XI tests for various valves in the control air system, check valve testing, air quality testing and measurements including moisture content, entrained particles, corrosive contaminants, and checks for oil or hydrocarbon content.

CLARIFICATION OF CONDITION B TO ADDRESS ERROR

As discussed in Section I, the proposed amendment would also make a correction to the REQUIRED ACTION for CONDITION B (now CONDITION C) to clarify that the required action for two or more inoperable ADV lines (with the exception of new CONDITION B) is to restore all but one ADV line to operable status. The current REQUIRED ACTION for CONDITION B incorrectly states that one ADV line must be restored to operable status. This proposed clarification is more conservative and is safer than the current literal ACTION statement and is consistent with the intent of the ACTION as described in the current TS BASES and consistent with an industry proposed change to the generic standard technical specifications (TSTF No. 100). The condition was identified through the WBN corrective action program. Action was taken to inform shift personnel of this situation and the appropriate actions to be taken in accordance with the Technical Specification Bases in the event CONDITION B of LCO 3.7.4 requires entry.

III. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

TVA has concluded that operation of WBN in accordance with the proposed change to the TS does not involve a significant hazards consideration. TVA's conclusion is based on its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

- (1) The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The addition of the 72 hour completion time and clarification to existing Technical Specifications do not increase the probability of an accident previously evaluated since these changes do not result in hardware or procedural changes which will affect probability of occurrence of an accident. The probability of an accident occurring during the 72 hour period as compared to the 24 hour completion time currently in the Technical Specifications remains small. Further, addition of the 72 hour completion time and clarification to existing Technical Specifications does not increase the consequences of an accident previously evaluated since sufficient equipment and procedures remain available to mitigate accidents previously evaluated. With two ADVs inoperable under this LCO, two ADVs remain in service. As indicated in the Applicable Safety Analysis of the Technical Specification Basis, two valves are adequate to cool the unit to the RHR entry conditions subsequent to accidents accompanied by a loss of offsite power. In addition, as indicated in the background discussion of the Bases of 3.7.4, the ADVs can be operated by use of a bottled nitrogen system designed to open the valves in the event of loss of normal and emergency air supplies. The valves may also be operated manually by using the valve hand wheels. Consequently, the two inoperable ADVs under this LCO are still expected to remain functional and could be placed in service and used to cool the steam generators, if necessary, in

the event of an accident. Based on the above, the addition of the 72 hour completion time and clarifications to existing Technical Specifications in accordance with this proposed amendment do not significantly increase the probability or consequences of an accident previously evaluated.

- (2) The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The addition of the 72 hour completion time and clarifications to existing Technical Specifications does not cause the initiation of any accident nor create any new credible limiting failure for safety-related systems and components. The change does not result in an event previously deemed incredible being made credible. As such, it does not create the possibility of an accident different than any evaluated in the FSAR. The change has an insignificant effect on the ability of the safety-related systems to perform their intended safety functions. Although the period during which a safety-related function (ACAS air supply) is assumed inoperable is extended from 24 to 72 hours, sufficient remaining equipment (two ADVs supplied by the opposite train ACAS) is available to mitigate the limiting SGTR accident, assuming no single failure occurs. Also, additional redundant and diverse equipment (normal control air, emergency bottled nitrogen, and the valve hand wheels) is available and expected to remain functional to ensure the ADVs accomplish their function following an accident. The change does not create failure modes that could adversely impact safety-related equipment. Therefore, the change will not create the possibility of a malfunction of equipment important to safety different than previously evaluated in the FSAR. Thus, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

- (3) The proposed amendment does not involve a significant reduction in a margin of safety.

The Technical Specifications currently allow two or more ADVs to be out of service for 24 hours, based on low probability of an event occurring during the period which would require use of the ADVs, and based on availability of the steam dump valves and the MSSVs. Providing a 72 hour completion time specifically for loss of two ADV valves due to loss on one train of ACAS to the ADVs does not significantly reduce the margin of safety since the probability of an event occurring during the 72 hour period is still small, and the capability exists to use the inoperable ADVs by manually operating the valves using the valve hand wheels, or by connecting the valve nitrogen bottle system, which was designed to operate the valves upon loss of air. In addition, the MSSVs, and the condenser steam dump valves would normally also be available. Thus, the proposed change does not significantly reduce the margin of safety.

Summary

TVA has evaluated the proposed technical specification change and has determined that it does not represent a significant hazards considerations based on criteria established in 10 CFR 50.92. Based on the above, TVA has determined that operation of Watts Bar in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Therefore, operation of Watts Bar in accordance with the proposed amendment would not involve a significant hazards consideration as defined in 10 CFR 50.92.

IV. ENVIRONMENTAL CONSIDERATION

The proposed change does not involve a significant hazards consideration, a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.