



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

DEC 22 1998

TVA-WBN-TS-97-014

10 CFR 50.90  
10 CFR 50.91(a)(6)

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 - EXIGENT LICENSE AMENDMENT  
REQUEST - INLET DOOR POSITION MONITORING SYSTEM**

In accordance with the provisions of 10 CFR 50.90 and 50.91(a)(6), TVA is submitting a request for an amendment to WBN's license NPF-90 to change the Technical Requirement Manual for Unit 1 on an exigent basis to prevent a potential shutdown of the unit. This change is required due to an identified ground on an annunciator circuit that is used to confirm operability of the door position monitoring system. The proposed amendment would change the Inlet Door Position Monitoring System bases section for TSR 3.6.2.1 of the WBN Technical Requirements Manual (TRM) to modify the requirements for the shifly channel check to account for the impact of the annunciator ground on the existing channel check methods. This request would provide relief until the next time the unit enters Mode 3.

The proposed revision to the current channel check methods could result in a slight increase in the probability of a malfunction of equipment important to safety. This slight increase could be due to a lessened capability to detect a failure by removing the requirement to check the door monitoring system against a similar parameter as part of the channel check. Accordingly, WBN has

9901040141 981222  
PDR ADDCK 05000390  
P PDR

D030

U.S. Nuclear Regulatory Commission  
Page 2.

DEC 22 1998

determined this change to be an unreviewed safety question which requires NRC approval prior to making the change.

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. This 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 TRM pages marked-up to show the proposed change. Enclosure 3 forwards the revised TRM pages which incorporate the proposed change.

WBN entered TR 3.6.2 at 2330 on December 20, 1998. Without relief, the TR action period will expire on January 3, 1999. At that time, an additional 48 hours would be provided which would result in shutting down the unit on January 5, 1999. Accordingly, TVA requests that the revised TRM be approved prior to that date. If you have any questions about this change, please contact me at (423) 365-1824.

Sincerely,



P. D. Pace  
Site Licensing and Industry Affairs

Enclosure  
cc: See page 3

Subscribed and sworn to before me  
on this 22nd day of December 1998

E. J. Connell Long  
Notary Public

My Commission Expires June 27, 2001

U.S. Nuclear Regulatory Commission  
Page 3

DEC 22 1998

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  
Division of Radiological Health  
3<sup>rd</sup> Floor  
L & C Annex  
401 Church Street  
Nashville, Tennessee 37243

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT (WBN)  
UNIT 1  
DOCKET NO. 50-390

PROPOSED TECHNICAL REQUIREMENTS MANUAL BASES REVISION  
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE

---

I. DESCRIPTION OF THE PROPOSED CHANGE

The proposed license amendment would temporarily revise the TRM Bases for Technical Surveillance Requirement (TSR) 3.6.2.1 (Channel Check - Ice Condenser Lower Inlet Door Position Monitoring System) to provide a temporary, optional method of satisfying the requirements for the Channel Check. This method would be allowed until the next WBN plant entry into Mode 3, currently planned in late February 1999, for the U1C2 refueling outage. Following any plant entry into Mode 3 or below, repairs could be made to a faulted electrical circuit for the lower inlet door common annunciator without the risks of excessive personnel radiation exposure if the repairs were to be performed at power. Specifically, the Bases for TSR 3.6.2.1 would be revised to add the following:

"TEMPORARY NOTE:

Prior to the next entry into Mode 3, the CHANNEL CHECK may, in the absence of the annunciator circuit, be performed by a comparison of open and shut indicators for each zone on the lower inlet door position display panel."

A mark-up of the proposed changes is provided in Enclosure 3.

II. CIRCUMSTANCES RELATED TO REQUEST FOR EXIGENCY REVIEW

The Inlet Door Position Monitoring System is defined in the bases for the TR to be the lower inlet door position display panel in the main control room. Except for its use as the channel check in TSR 3.6.2.1, the 48-switch annunciator circuit itself is not required for system operability.

TVA entered TR 3.6.2, Action Statement A for Inlet Door Position Monitoring System inoperable in Mode 1 on December 20, 1998, when the main control room (MCR) lower inlet door common annunciator (window 144A) began alarming sporadically. Announcer Response Instruction 144-A, "Ice Condenser Inlet Door Open" corrective action

is to determine which door zone is opened on the lower inlet door position display panel, 1-XI-61-187, located on panel 1-M-10 in the MCR. Although a check of this panel indicated and still indicates that all 48 doors are in the closed position, the WBN operating staff conservatively determined the Inlet Door Position Monitoring System to be inoperable since it would appear it could not pass a CHANNEL CHECK, as required by TSR 3.6.2.1. TVA's review of ice condenser performance data identified no anomalies that would indicate an open inlet door.

Under TSR 3.6.2.1, the CHANNEL CHECK for the inlet door position monitoring system is required once every 12 hours to ensure that a gross failure of instrumentation has not occurred. As discussed in the Bases for TSR 3.6.2.1, a CHANNEL CHECK is a comparison of the parameter indicated on one channel to a similar parameter on other channels. A dual switch arrangement on the lower inlet doors (2 switches per door, 96 total) allows comparison of open and shut indicators for each zone of the lower inlet door position display panel (1-XI-61-187, 8 doors per zone) as well as a check with the common annunciator window (144-A) on 1-M-6. An alternate method using a circuit continuity check to confirm door position is also provided in the Bases.

TVA has verified by M&TE testing that a ground fault has occurred in the cabling between the doors and the annunciator. The location of the fault is estimated to be inside the polar crane wall near Ice Condenser Bay No. 24. The personnel radiation exposure in this area is prohibitive from the aspect of making repairs on-line and is estimated at approximately 8 Man-Rem at 100% power and 3 Man-Rem at 30% power, using two electricians. As mentioned, the door position display panel on 1-M-10 indicates that the inlet doors are closed. With the annunciator circuit out of service, the inlet door position monitoring system is still capable of adequately performing its intended function. Therefore, TVA has a high confidence level that the doors are actually closed.

TVA does not consider that a gross failure of the inlet door position monitoring system has occurred. The ground discussed above, however, prevents use of both approved methods of channel check and, with the existing methods of channel check performance not available, the system is considered to be inoperable because 1-XI-61-187 cannot be checked against the inoperable annunciator circuit.

With the Position Monitoring System declared technically inoperable, operators entered Action Statement A which states "confirm the ice bed temperature monitoring system is operable with the ice bed temperature  $\leq 27^{\circ}\text{F}$  every four

hours and restore the inlet door position monitoring system to operable status within 14 days." Action B allows an additional 48 hours to restore to operable status and Action C then allows 6 hours to be in Mode 4 and 36 hours to be in Mode 5. These completion times will expire on January 5, 1999, at which time TVA will be forced into an unnecessary plant shutdown to Mode 5 with no corresponding benefit to the health and safety of the public.

Therefore, TVA is requesting under 10 CFR 50.91(a)(6) that an exigent circumstance exists to request prompt approval of the proposed temporary license amendment to the Technical Surveillance Requirement in order to avoid an unnecessary shutdown due to the disabled annunciator circuit.

### **III. REASON FOR THE PROPOSED CHANGE**

TVA has determined that the proposed temporary method of performing the CHANNEL CHECK provides an adequate level of assurance that the lower inlet door position monitoring system remains operable, without reliance on the common annunciator circuit. As discussed, with the annunciator circuit out of service, the inlet door position monitoring system is still capable of adequately performing its intended function. The annunciator circuit used in the channel check provides an early warning that a problem may exist however, it provides no safety function or precise monitoring indication of door position.

Ninety-six limit switches monitor the position of the lower inlet doors. Two switches are mounted on the door frame for each door panel. The position and movement of the switches are such that the doors must be effectively sealed before the switches are actuated to give a green status light. Half (48) of the limit switches provide a signal to the common annunciator, and the remaining 48 provide a signal to the lower inlet door position monitoring system using the display panel on 1-M-10.

Door monitoring using 48 limit switches for the 1-M-10 door position display is accomplished by dividing the ice condenser into six zones, each containing four inlet door assemblies, or a total of eight door panels. The switch contacts are configured for each status light set to illuminate a green light if all 8 doors are closed (the 8 "closed" contacts are wired in a series configuration) and to illuminate a red light if any of the 8 doors are open (the 8 "open" contacts are wired in a parallel configuration). Please reference UFSAR Figure 6.7-41. Although this system is not an "independent" arrangement, it is sufficient to detect door and switch anomalies that could be anticipated for the temporary period until the

beginning of the U1C2 refueling outage (or until the entry into Mode 3). Further, the possibility of isolated zone failures which would not be detected by the display panel during a door open event is remote. Typical lower inlet door behavior for such an event would involve numerous doors "popping" open providing multiple status indications on the display panel if the doors did not reseal.

As mentioned, TVA has verified by M&TE testing that a problem has occurred in the cabling between the doors and the annunicator. The problem appears to be a grounded shield conductor of a cable for one of the 48 doors' limit switches. In addition, the insulation resistance reading on the black and white conductors of the same cable was significantly lower than expected. This ground causes annunciation window 144A to remain lit. The ground appears near the first limit switch in a parallel circuit of 48 switches. Whatever is causing the lower resistance reading is near the same location of the grounded shield. The location of the condition is inside polar crane wall near the first limit switch at azimuth 230.

Based on the estimated exposures, stay time for light work in this area is significantly less than the time required to effect repairs during power operations.

#### **IV. SAFETY ANALYSIS**

Proper operation of the inlet doors is necessary to mitigate the consequences of a loss of coolant accident or a main steam line break inside containment. The Inlet Door Position Monitoring System, however, is not required for proper operation of the inlet doors, nor is its OPERABILITY required as an initial condition for a DBA. Hence, the Inlet Door Position Monitoring System is not a consideration in the analyses of DBAs. Monitoring of inlet door position is necessary because the inlet doors form the barrier to air flow through the inlet ports of the ice condenser for normal unit operation. As such the monitoring system provides additional assurance that the ice bed is not degrading due to hot air flowing into the lower ice condenser. As discussed in the TRM Bases, failure of the Inlet Door Position Monitoring System requires an alternate OPERABLE monitoring system to be used to ensure that the ice condenser is not degraded.

For the proposed revision in the channel check to impact detection, there would have to be two coincident failures. First, a single inlet door would have to open. This is very unlikely. Second, on that same door, the switch which feeds the door panel light would have to

have failed. The likelihood of these coincident failure is judged to be very small.

TVA has determined that the proposed temporary method of performing the CHANNEL CHECK provides an adequate level of assurance that the lower inlet door position monitoring system remains operable. The annunciator provides no safety function or precise monitoring indication of door position. With the annunciator out of service, however, the inlet door position monitoring system is still capable of adequately performing its intended function. Verification that the power is on, green lights are indicating, and the red lights are not indicating on a 12-hour frequency confirms the door monitoring system is performing its required function and provides reasonable assurance for the short time period until WBN next enters Mode 3, that the Ice Condenser System remains operable with no deleterious effects from an opened door(s).

Further, the annunciator itself is not a required part of the door position monitoring system, but rather provides similar information on the status of the doors as the door position system that can be used for a gross check of door position system OPERABILITY.

#### **V. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION**

The Inlet Door Position Monitoring System is defined in the bases for the TR to be the lower inlet door position display panel in the main control room. Except for its use as the channel check in TSR 3.6.2.1, the 48 switch annunciator circuit itself is not required for system operability.

TVA entered TR 3.6.2, Action Statement A for Inlet Door Position Monitoring System inoperable in Mode 1 on December 20, 1998, when the main control room (MCR) lower inlet door common annunciator (window 144A) began alarming sporadically. Annunciator Response Instruction 144-A, "Ice Condenser Inlet Door Open" corrective action is to determine which door zone is opened on the lower inlet door position display panel, 1-XI-61-187, located on panel 1-M-10 in the MCR. Although a check of this panel indicated and still indicates that all 48 doors are in the closed position, the WBN operating staff conservatively determined the Inlet Door Position Monitoring System to be inoperable since it would appear it could not pass a CHANNEL CHECK, as required by TSR 3.6.2.1.

The proposed license amendment would temporarily revise the TRM Bases for Technical Surveillance Requirement (TSR) 3.6.2.1 (Channel Check - Ice Condenser Lower Inlet

Position Monitoring System) to provide a temporary, optional method of satisfying the requirements for the Channel Check. This method would be allowed until the next WBN plant entry into Mode 3, currently planned in late February 1999, for the U1C2 refueling outage.

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).

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

The lower inlet doors have been verified to be closed by confirming light on the door position monitoring system panel in the control room. The annunciator circuit which is currently out of service is not in the required portion of the system. This annunciator provides no safety function. Further, the Inlet Door Position Monitoring System is not required for proper operation of the inlet doors. Therefore, by verifying the green lights are indicating and the red lights are not indicating on a 12-hour frequency provides reasonable assurance the door monitoring system is performing its required function and that the ice condenser system remains operable with no negative effects from an opened door(s). Accordingly, the change does not increase the probability or consequences of an accident previously evaluated.

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

The ice condenser lower inlet doors and ice bed are passive features and do not have the potential of creating an accident. This change retains a reasonable method of ensuring door position is known. Accordingly, there are no mechanisms that could create an accident of a different type.

C. The proposed amendment does not involve a significant reduction in a margin of safety.

This TRM bases change provides a reasonable alternative method of ensuring the door position monitoring system is operable. The door position monitoring system itself is not assumed to actuate in any way during the course of postulated plant events. Any problems with door positions would be noted well before it could have any impact on ice bed performance. Accordingly, no Technical Specification is impacted and there is no significant reduction in a margin of safety.

V. ENVIRONMENTAL IMPACT 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. For these reasons, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.