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

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

TVA-WBN-TS-99-09 10CFR 50.90

March 6, 2000

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. 99-09 - ALLOWANCE TO USE ADMINISTRATIVE CONTROLS FOR OPEN PENETRATIONS DURING REFUELING OPERATIONS

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 Technical Specifications for Unit 1. The proposed amendment would revise the Watts Bar Nuclear Plant (WBN) Unit 1 Technical Specifications (TS) and associated TS Bases for Limiting Condition for Operation (LCO) 3.9.4, "Refueling Operations - Containment Penetrations," to allow the containment personnel airlock doors and certain containment penetrations to be open during refueling activities under appropriate administrative controls. The changes are described below and are consistent with NRC approved Technical Specification Task Force Travelers (TSTF) Numbers TSTF-68, Revision 2, and TSTF-312, Revision 1.

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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, including 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. Enclosure 3 forwards the revised TS pages which incorporate the proposed change. Enclosure 4 lists the commitments made in this submittal.

TVA requests that approval be provided approximately 30 days prior to beginning the Unit 1 Cycle 3 refueling outage scheduled for September 10, 2000, and 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,

Larry S Bryant for

R. T. Purcell

Enclosures
cc: See page 3

Subscribed and sworn to before me
on this 6th day of March, 2000.

Judy C. Lancaster

Notary Public
My Commission Expires 2-28-2001

MAR 0 6 2000

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ENCLOSURE 1

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

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE 99-09
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE

I. DESCRIPTION OF THE PROPOSED CHANGE

The proposed license amendment would revise the Watts Bar Nuclear Plant (WBN) Unit 1 Technical Specifications (TS) and associated TS Bases for Limiting Condition for Operation (LCO) 3.9.4, "Refueling Operations - Containment Penetrations," Items (b) personnel airlock doors and (c) penetrations. This revision would allow both sets of containment personnel airlock doors and certain containment penetrations to be open during refueling activities using appropriate administrative controls. The changes are described below and are consistent with NRC approved Technical Specification Task Force Travelers (TSTF) numbered TSTF-68, Revision 2, and TSTF-312, Revision 1. TSTF-68 includes several minor clarifications to the TS Bases for LCO 3.9.4, which TVA also proposes to adopt. Differences between TVA's proposal and the travelers are identified and discussed herein. The specific changes which TVA proposes are illustrated by the markup of the WBN TS, provided in Enclosure 2.

Containment Personnel Airlock Doors

TVA proposes a revision to LCO 3.9.4, Item (b) and associated TS Bases which will permit both doors of the containment personnel airlocks to be open during fuel handling activities and/or core alterations. This revision will allow both doors of both containment personnel airlocks to be open provided one personnel airlock door in each airlock is capable of closure, and provided the auxiliary building gas treatment system (ABGTS) is operable in accordance with TS 3.7.12. TVA will use administrative controls that ensure in the event of a fuel handling accident (FHA) inside containment, the open airlock will be promptly closed following containment evacuation. This change is consistent with TSTF-68, R2, with the additional WBN condition on ABGTS operability.

Containment Penetrations

TVA proposes a revision to LCO 3.9.4, Item (c) and associated TS Bases that will add a NOTE to allow unisolating containment penetration flow path(s) under administrative controls to facilitate maintenance activities, such as ice blowing, during refueling operations. Use of this provision requires the ABGTS to be operable in accordance with TS 3.7.12. TVA will use administrative controls that ensure in the event of a FHA inside containment, the open penetrations will be promptly closed. These administrative controls include an awareness of the temporary flow path conditions and the designation of individuals to isolate the flow paths in the event of a FHA. This change is consistent with TSTF-312, R1 with the additional WBN condition on

ABGTS operability. TVA's proposed change also provides a reference in the TS Bases to Generic Letter 88-17 regarding containment closure requirements.

II. REASON FOR THE PROPOSED CHANGE

Containment Personnel Airlock Doors

The current TS LCO 3.9.4 requires that one door in each containment personnel airlock be closed during core alterations and movement of irradiated fuel assemblies within containment. This requirement hinders personnel access to and from containment. The proposed revision will allow for more efficient performance of outage activities while continuing to provide an acceptable barrier against the release of radioactive material to the outside atmosphere during refueling operations inside containment. This TS change would eliminate much of the cycling of the personnel air lock doors associated with personnel access. As a result, the personnel air lock door seals would receive less wear, improving their reliability.

TVA notes that WBN's proposed TS change for the containment personnel airlock doors is similar to the submittal and analysis performed by Sequoyah Nuclear Plant, Units 1 and 2, for their personnel airlock doors, approved by the NRC September 6, 1995, as Amendments No. 199 and 209, respectively.

Containment Penetrations

TVA currently has a similar provision at WBN for temporarily opening containment penetration flow paths in Modes 1 through 4 under administrative controls. However, this allowance does not apply during refueling operations when the need for containment integrity is less. While moving irradiated fuel within containment or during core alterations, the allowance to keep penetration flow paths open with administrative controls in place will support the performance of other outage activities such as ice blowing during ice condenser maintenance concurrent with fuel handling activities. The current TS would require that some outage activities, including ice blowing, are interrupted while fuel handling activities or core alterations are in progress. The proposed revision will allow for more efficient performance of outage work while continuing to provide an acceptable barrier against the release of fission product radioactivity to the outside atmosphere during core alterations or fuel handling activities inside containment.

The principle application of this TS change will allow ice blowing during servicing of the WBN ice condenser concurrent with fuel loading activities. Normally, during power operations and refueling operations, the ice blowing containment penetrations, their associated negative air return line penetrations, and other spare penetrations are closed with blind flanges installed in compliance with TS 3.9.4. During refueling outages when fuel is not being handled within containment (e.g., containment TS are not in effect), current practice involves removal of the blind flanges and routing of temporary hoses and piping through the penetrations to facilitate ice loading activities. However, in conjunction with the proposed TS, WBN is modifying the configuration of the temporary ice blowing and negative air return lines. In this configuration the containment penetrations will not actually be open to the outside atmosphere during fuel handling activities. Instead, they will be opened from their normal configuration in that the blind flanges will be removed. Piping, hoses, cabling, wiring, etc., which are needed to support outage activities in general, and specifically ice loading during refueling operations will be routed through the penetrations similar to current methods. However, the penetrations will then be sealed using various methods such that air flow from the containment atmosphere through the penetrations will be prohibited. The temporary penetration flow paths would incorporate isolation valves which may be opened to support ice loading and other refueling activities only under the administrative controls of the proposed TS change, thereby allowing prompt closure in the event of a FHA.

III. SAFETY ANALYSIS

The primary containment serves to contain fission product radioactivity that may be released from the reactor core following an accident inside containment. This ensures that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the primary containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions. The requirements for containment penetration closure ensure that a release of fission product radioactivity from containment due to a FHA during refueling will be restricted to within regulatory limits.

During core alterations or movement of irradiated fuel assemblies within containment, a release of fission product radioactivity to the environment due to a FHA inside containment will be restricted to required limits when the TS requirements are met. In Modes 1, 2, 3, and 4, this is accomplished by maintaining containment operable as described in LCO 3.6.1, "Containment." During refueling operations, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere are less stringent. The TS requirements are therefore referred to as "containment closure" rather than "containment operability." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the 10 CFR 50 Appendix J leakage criteria and tests are not required.

The requirements of LCO 3.9.4, "Refueling Operations - Containment Penetrations," ensure that the consequences of a postulated FHA inside containment during core alterations or fuel handling activities remain within acceptable limits. The LCO establishes containment closure requirements, which limit the potential escape paths for fission products by ensuring that there is at least one integral barrier to the release of radioactive material. LCO 3.9.4 requires a minimum of 1 door in each personnel airlock to be closed and requires that each penetration providing direct access from the containment atmosphere to the outside atmosphere either be closed by a manual or automatic isolation valve, blind flange, or "equivalent." For the operable containment ventilation penetrations, this LCO ensures that these penetrations are capable of isolation. In addition, the LCO addresses closure requirements for the containment equipment hatch. As discussed in the Bases of LCO 3.9.4, "equivalent" isolation methods must be NRC approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for containment penetrations during fuel movement. As discussed in Generic Letter 88-17, "Loss of Decay Heat Removal," closure by other valves or blind flanges may be used if they are similar in capability to those provided for containment isolation. These may be constructed of standard materials and may be justified on the basis of either normal analysis methods or reasonable engineering judgment. TVA has added this reference to Generic Letter 88-17 in the TS Bases for LCO 3.9.4, as indicated in Enclosure 2.

The proposed TS change to allow the containment personnel airlock doors and penetration flow paths to remain open while using administrative controls is consistent with NRC approved TS travelers TSTF-68, R2 and TSTF-312, R1. Further, this approach is consistent with the administrative controls currently allowed by WBN TS for more restrictive, higher operational modes. TVA currently has provisions in WBN TS 3.6.3 "Containment Isolation Valves" that allow penetration flow paths to be unisolated under administrative controls in Modes 1 through 4. The controls include a dedicated operator having continuous communication with the control room who can isolate the open valve in the event of an accident. This allowance has been determined to be an acceptable means to allow the opening of flow paths in consideration of the administrative controls that minimize the impact of an accident. These modes are more significant than during refueling operations due to the RCS energy and potential to provide a significant motive force for the expulsion of radionuclides, subsequent to a design basis accident.

A similar allowance is acceptable for penetrations that are open during fuel movement or core alterations provided appropriate administrative controls are utilized. During core alterations or fuel movement activities inside containment, the potential for a fuel handling accident resulting in containment pressurization is negligible since the reactor is shutdown. Therefore, opening both of the containment personnel airlock doors simultaneously during refueling operations is less significant due to the lower energy conditions of the reactor coolant system. Likewise, allowing penetration flow path(s) that have direct access from the containment atmosphere to the outside atmosphere to be unisolated is acceptable during refueling operations provided appropriate administrative controls are used. During refueling operations, since there is no potential motive force to expel radioactive material from containment, the necessary administrative controls to accomplish the containment closure function can be more flexible. These proposed controls will include an awareness of the open containment personnel airlock door or penetration and designation of individual(s) responsible for promptly closing the airlock or open penetration in the event of a FHA inside containment. In the event of the accident, closure of the personnel airlock doors will be accomplished following evacuation of personnel from containment. The administrative controls for opened containment penetration flow paths will specify that isolation must be accomplished by designated personnel within 15 minutes following the accident.

Under the proposed TS change, containment penetrations that currently require isolation with blind flanges during refueling operations would now be opened to allow temporary piping, hoses, cabling, wiring, etc., to pass through the penetration. Once this equipment is in place, the penetration(s) would be sealed with a silicone sealant to maintain a pressure boundary across the penetration. This pressure boundary will contain any pressure surges expected to occur during refueling operations including a design basis FHA inside containment. Therefore, the penetrations would not "communicate" directly with the outside atmosphere. Instead, the sealed penetration would either pass through or terminate within the annulus between the containment vessel and the shield building wall. The temporary fluid lines (piping/hoses) will incorporate appropriate isolation valves typically located within the containment and/or annulus, which may be closed under the specified administrative controls following an accident. During refueling operations, the annulus may be open to the auxiliary building since the equipment blast doors (separating the auxiliary building and the shield building) may be open. In this case, the annulus is part of the auxiliary building secondary containment enclosure (ABSCE) which is designed to hold up radioactive gases prior to their filtered release. Therefore, leakage past the penetration seals and open personnel airlocks would pass into the ABSCE.

As discussed in WBN UFSAR Section 6.2.3, the WBN ABSCE serves as a secondary containment enclosure around primary containment during Modes 5 and 6 when the blast door is open. The total volume of the ABSCE includes the containment vessel interior and the annulus volumes as well as portions of the auxiliary building. The design bases for the ABSCE assure that an effective barrier exists for airborne fission products that may leak from the primary containment, or the auxiliary building fuel handling area, during a loss-of-coolant accident (LOCA) or a fuel handling accident. This helps to ensure that radioactive material that may escape from primary containment through the subject penetration seals or the open airlock is processed through the auxiliary building gas treatment system (ABGTS) filters upon initiation. The existing TS requirement to have two trains of ABGTS operable during movement of irradiated fuel assemblies in the fuel handling area ensures the ability to process radioactive fission products within the ABSCE through filters before it is released to the outside atmosphere. The ABGTS is fully capable of mitigating the radiological consequences of a FHA in the ABSCE, whether it occurs in the auxiliary building or the containment building. Therefore, the proposed TS controls for operability of ABGTS provide added assurance that once ABGTS is initiated (automatically or manually), leakage past the open airlock or containment penetrations seals will be adequately processed and filtered.

In order to ensure ABSCE boundary integrity and the ABGTS design objective to maintain negative air pressure within the ABSCE, auxiliary building isolation and shutdown and isolation of the reactor building purge air ventilation system will be necessary in the event of a FHA inside containment, concurrent with the containment or annulus open to the auxiliary building. The purge air system is designed to maintain the primary containment and reactor building annulus environments within acceptable limits for equipment operation and personnel access during normal operation, shutdown, and refueling operations. The system provides a motive force to supply fresh air to the containment and annulus when occupied and provides exhaust air cleanup through HEPA-carbon filter trains to limit the potential release of radionuclides to the outside environment. Safety-related, redundant, purge air exhaust radiation monitors required by TS are designed to generate an automatic containment vent isolation (CVI) signal which isolates and shuts down the purge system in the event of a FHA inside containment. However, in the event the radionuclides escape through the open airlocks prior to an automatic CVI, manual shutdown and isolation of the purge system would be necessary for ABSCE integrity and proper ABGTS operation. As discussed in more detail later, WBN procedures for a FHA inside containment currently assure isolation and shutdown of the containment purge system. Additional procedural controls will be added to ensure isolation of the auxiliary building in the event of a FHA inside containment with the personnel airlock doors or annulus open to the auxiliary building.

The WBN design basis FHAs are defined as the dropping of a spent fuel assembly onto the spent fuel pit floor or inside containment. Both analyses resulted in the rupture of the cladding of all the fuel rods in the assembly. These FHA events are postulated for safety system design purposes even though many administrative controls and physical limitations are imposed on fuel handling operations. Chapter 15.5.6 of the WBN UFSAR discusses the consequences of a postulated FHA inside containment assuming TS penetrations including the personnel air lock doors are closed. Although the purge air exhaust radiation monitors generate an automatic CVI signal which isolates and shuts down the purge system, the current FHA calculations assume all of the radioactive isotopes are discharged through the purge air exhaust ductwork and filters to the outside atmosphere through the Unit 1 shield building exhaust stack. The results from the current analysis of a FHA inside containment indicate an exclusion area boundary thyroid dose of 45.8 REM. The results for a FHA within the auxiliary building show an exclusion area boundary thyroid dose of 1.8 REM. These results are well within the 10 CFR 100 offsite dose limits of 300 REM and the limits of Standard Review Plan, Section 15.7.4, Revision 1. The difference in the two analyses is due to the difference in filter efficiencies for the ABGTS and purge air exhaust cleanup units.

TVA has revised the dose calculations for a FHA inside containment to address the proposed TS change. For the revised calculation, all of the original accident assumptions and initial conditions discussed in WBN UFSAR Section 15.5.6 have been retained. The results for the FHA inside containment with open airlock doors and/or open penetration flow paths are bounded by the current analysis. This is primarily due to the lack of a pressure transient associated with the accident and due to administrative controls which ensure proper configuration of ABGTS, the ABSCE, and closure of the subject penetrations in response to an accident. In the event of a FHA inside containment, transmission of radionuclides to the auxiliary building is unlikely. This is because the dispersion of radioactive material through the containment will not be driven by any pressure differential resulting from the accident, but only due to the course of containment air circulation, typically from the lower compartment to the upper compartment. This air flow direction is influenced by the normal tendency of a slight air pressure buildup in the lower compartment from various control air sources (valves, tools, etc.) used in support of refueling activities. Because the postulated FHA occurs in the containment upper compartment, migration of radioisotopes to the vicinity of any open penetration flow paths in the lower compartment is unlikely. As discussed, penetration(s) would be sealed with a silicone sealant to maintain a pressure boundary across the penetration that will contain any pressure surges expected to occur during refueling operations. The administrative controls for prompt closure of the personnel airlock doors and containment penetration flow paths would further minimize the potential spread of radioactive isotopes from the reactor building into the auxiliary building. Therefore, following a FHA inside containment, the lack of containment pressurization provides sufficient time to manually initiate the ABGTS, establish the ABSCE boundary, and isolate the penetration flow paths and open air locks to minimize dose consequences. TVA's analysis has determined that the consequences of a FHA inside containment with open airlock doors and/or open penetration flow paths are bounded by the current analysis described in the WBN FSAR. This ensures that offsite dose is well within the 10 CFR 100 regulatory limits and the limits of Standard Review Plan, Section 15.7.4, Revision 1, and that control room operator dose remains within the limits of 10 CFR 50, Appendix A, General Design Criteria 19.

While unlikely that radionuclides would enter the auxiliary building, should this occur, a small release could occur from the auxiliary building general ventilation exhaust prior to establishing the ABSCE boundary. This release would be expected to be promptly detected by the auxiliary building general exhaust vent radiation monitors that alarm in the main control room. Although these monitors are not safety-related, they are monitored by Operations during mitigation of a FHA. In response to the alarm and as discussed below, operators would take appropriate actions including initiation of ABGTS, an auxiliary building isolation (ABI), and manual isolation of the purge system if not already accomplished.

WBN programmatic controls ensure that a FHA inside containment is quickly identified and appropriate actions implemented to assure that post accident doses are minimized. Abnormal Operating Instruction (AOI)-29, "Dropped or Damaged Fuel or Refueling Cavity Seal Failure," provides operator actions to mitigate a FHA. These actions include, but are not limited to the following: (1) Notify personnel in the general area of the radiation concern and announce over the public address system for all personnel to evacuate affected areas, (2) Monitor for increasing radiation levels on radiation monitors including U1 shield building vent, auxiliary building vent, and upper containment, (3) Verify CVI has occurred and if not, stop containment purge supply and exhaust fans and instrument room fans, and close all purge isolation dampers, and (4) Verify ABGTS is running. The containment purge monitors are TS instrumentation consisting of redundant safety circuitry that will generate an automatic CVI upon the detection of radioisotopes, therefore, these controls are adequate to ensure that response. Further, these procedural actions are appropriate to ensure that ABGTS is promptly initiated directly in response to the accident. In addition, to ensure ABSCE boundary integrity, WBN procedure(s) will be revised to include a requirement to initiate an ABI in the event a FHA occurs inside containment with the airlock doors open or the annulus open to the auxiliary building. The additional administrative controls of this proposed TS change will be added to appropriate station procedures. In summary, these controls include:

1. Appropriate personnel will maintain an awareness of the open status of the personnel airlocks and penetrations flow paths during core alterations and movement of irradiated fuel assemblies within containment.

2. For the open airlock doors, the administrative controls will ensure that the number of lines and hoses that run through the airlock doorways are controlled to ensure timely door closure. The administrative controls will clearly identify the method and responsibility for disconnecting these lines and provisions for venting and draining if necessary. Quick disconnects will be utilized for lines and hoses routed through the doorway. These disconnects will be located near the airlock doorway to allow timely closure of the doors. TVA's controls will ensure that these lines and hoses do not serve any personnel or equipment safety function that would be jeopardized if the service is disconnected.

3. Specified individuals will be designated and readily available to close the open personnel airlock. In the event of a FHA inside containment, one personnel airlock door will be closed within 15 minutes after the accident.

4. Specified individuals will be designated and readily available to isolate open penetration flows paths in the event of a FHA inside containment. Isolation of the penetration flow paths is required within 15 minutes.

TVA's proposed change to the TS also incorporates two minor clarifications to the TS Bases for LCO 3.9.4 which are endorsed by NRC approved TSTF-68, Revision 2. These changes include: (1) Clarification in the Background that the containment closure requirements ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits rather than restricted from escaping to the environment; and (2) A similar clarification in the Bases for Surveillance Requirement 3.9.4.1, that the release of fission product radioactivity within containment will not result in a release of fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section 15.7.4. The SRP 15.7.4 acceptance limits are currently addressed in the Applicable Safety Analysis of the Bases for LCO 3.9.4.

Therefore, these two changes are acceptable because they represent clarifications only and do not affect current acceptance limits for offsite dose consequences for a FHA inside containment and because they have been previously approved by the NRC staff.

Based on TVA's revised calculation for the FHA inside containment and the administrative controls specified for the proposed allowances to unisolate the containment personnel airlock doors and containment penetration flow paths, the proposed TS revision is acceptable. With respect to the proposed administrative controls, the subject license amendment provides assurance that offsite dose levels associated with a FHA inside containment will be maintained well within the applicable regulatory limits of 10 CFR 100.

IV. <u>**NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION**</u>

The proposed license amendment would revise the Watts Bar Nuclear Plant (WBN) Unit 1 Technical Specifications (TS) and associated TS Bases for Limiting Condition for Operation (LCO) 3.9.4 Containment Penetrations. The revision would permit both doors of the containment personnel airlocks to be open during refueling operations to facilitate personnel and equipment access to containment. It would also allow containment penetration flow paths to be open under administrative controls to facilitate maintenance activities during refueling operations. TVA has concluded that operation of WBN Unit 1, in accordance with the proposed changes to the technical specifications, does not involve a significant hazards consideration. TVA bases this conclusion 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. <u>**The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.**</u>

The proposed change to WBN Technical Specification LCO 3.9.4, Refueling Operations - Containment Penetrations, would allow both doors of the containment personnel airlocks and certain containment penetration flow paths to be open during core alterations and movement of irradiated fuel within containment under specific administrative controls. The proposed change is consistent with NRC approved TS travelers TSTF-68, R2 and TSTF-312, R1, and proposes controls similar to the administrative controls currently allowed by WBN TS (LCO 3.6.3) for containment penetrations during more restrictive, higher operational modes. The administrative controls will ensure appropriate personnel are aware of the open personnel airlocks and penetration flow paths and ensure designated individual(s) are assigned to promptly close the airlock doors and penetration flow paths in the event of a fuel handling accident (FHA) inside containment. Timely closure of penetration flow paths and closure of the airlock doors following containment evacuation will ensure that the unlikely transmission of radioactive material from the reactor building to the auxiliary building is minimized.

In order to minimize the consequences of any leakage of radionuclides past these open penetrations during the period of time before their closure, additional procedural controls will be provided to ensure the integrity of the WBN auxiliary building secondary containment enclosure (ABSCE) boundary and proper auxiliary building gas treatment system (ABGTS) operation. These controls will ensure that in the event of a fuel handling accident (FHA) inside containment, the following will be promptly accomplished: shutdown and isolation of the reactor building purge air ventilation system, auxiliary building isolation, and initiation of ABGTS. Therefore, through the use of these controls for the proposed license amendment, the offsite dose consequences of a FHA inside containment with open airlock doors and/or open penetration flow paths remain well within the 10 CFR 100 limits and within the limits of 10 CFR 50, Appendix A, General Design Criteria 19 for control room operator dose.

The containment personnel airlock doors and containment penetration flow paths are not initiators to any previously evaluated accident for WBN. In addition, the position of the airlock doors and penetration flow paths during refueling operations has no affect on the probability of the occurrence of any accident previously evaluated. The proposed revision does not alter any plant equipment or operating practices in such a manner that the probability of an accident is increased. Since the probability of a accident is not affected by the positions of the containment personnel airlock doors, and because the doses remain within acceptable limits, the proposed change does not involve a significant increase in 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 open containment personnel airlock doors and containment penetration flow paths are not accident initiators and do not represent a significant change in the configuration of the plant. The proposed allowance to open the containment personnel airlock doors and penetrations during refueling operations will not adversely affect plant safety functions or equipment operating practices such that a new or different accident could be created. Therefore, since plant safety functions are not adversely affected and the isolation status of containment personnel airlock doors and penetration flow paths do not contribute to the initiation of postulated accidents, the proposed revision will not create a new or different kind of accident from any accident previously evaluated.

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

WBN Technical Specification LCO 3.9.4 closure requirements for containment penetrations ensure that the consequences of a postulated FHA inside containment during core alterations or fuel handling activities remain within acceptable limits. The LCO establishes containment closure requirements, which limit the potential escape paths for fission products by ensuring that there is at least one integral barrier to the release of radioactive material. The proposed change to allow the containment personnel airlock doors and containment penetration flow paths to be open during refueling operations under administrative controls does not significantly affect the expected dose consequences of a FHA because of the absence of containment pressurization during refueling. Without this motive force, the potential for additional offsite dose consequence is unlikely. The proposed administrative controls provide assurance that prompt closure of the airlock doors and penetration flow paths will be accomplished in the event of a FHA inside containment thus minimizing the transmission of radioactive material from the reactor building to the auxiliary building. Under the proposed TS change, the provisions to ensure shutdown and isolation of the reactor building purge air ventilation system, auxiliary building isolation, and initiation of ABGTS and to promptly isolate open penetration flow paths and close the airlock doors following containment evacuation, provide assurance that the offsite dose consequences of a FHA inside containment will remain well within the 10 CFR 100 limits and within the limits of 10 CFR 50, Appendix A, General Design Criteria 19 for control room operator dose. Therefore, the proposed change to the WBN Technical Specifications does not involve a significant reduction in the 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. Therefore, 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.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
WBN UNIT 1 - DOCKET NO. 390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE 99-09
MARKED PAGES

I. AFFECTED PAGE LIST

Inserts
3.9-6
B 3.9-12 (Provided for information - No Changes)
B 3.9-13
B 3.9-14
B 3.9-15 (Provided for information - No Changes)
B 3.9-16

II. MARKED PAGES

See attached.

INSERTS

Insert 1 (TS page 3.9-6)

.... NOTE: ....

Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls provided ABGTS is OPERABLE in accordance with TS 3.7.12.

....

Insert 2 (TS Bases page B 3.9-14)

The containment personnel airlock doors may be open during movement of irradiated fuel in the containment and during CORE ALTERATIONS provided that one door is capable of being closed in the event of a fuel handling accident and provided that ABGTS is OPERABLE in accordance with TS 3.7.12. Should a fuel handling accident occur inside containment, one personnel airlock door will be closed following an evacuation of containment. The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident, and 3) the ABGTS is OPERABLE in accordance with TS 3.7.12. Operability of ABGTS is required to alleviate the consequences of a FHA inside containment resulting in leakage of airborne radioactive material past the open airlock or penetration flow paths prior to their closure.

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts;

or capable of being closed provided ABGTS is OPERABLE in accordance with TS 3.7.12;

b. One door in each air lock closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Containment Vent Isolation System.

INSERT 1

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetration not in required position	A.1 Suspend CORE ALTERATIONS. <u>AND</u> A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately Immediately

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

NO CHANGES THIS PAGE

BASES

BACKGROUND

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown

(continued)

BACKGROUND (continued)

when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain closed.

capable of being

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted ~~from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.~~ ***to within regulatory limits.***

The Reactor Building Purge Ventilation System operates to supply outside air into the containment for ventilation and cooling or heating, to equalize internal and external pressures, and to reduce the concentration of noble gases within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. Because of their large size, the 24-inch containment lower compartment purge valves are physically restricted to < 50 degrees open. The Reactor Building Purge and Ventilation System valves can be opened in MODES 5 and 6, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). In MODE 6, large air exchanges are necessary to conduct refueling operations. The normal 24-inch purge system is used for this purpose. The ventilation system must be either isolated or capable of being automatically isolated upon detection of high radiation levels within containment.

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be NRC approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during fuel movements (Ref. 1).

Closure by other valves or blind flanges may be used if they are similar in capability to those provided for containment isolation. These may be constructed of standard materials and may be justified on the basis of either normal analysis methods or reasonable engineering judgment (Ref. 4).

(continued)

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," and the minimum decay time of 100 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of the NRC Policy Statement.

LCO

This LCO limits the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE Reactor Building Purge and Ventilation System penetrations. For the OPERABLE Reactor Building Purge and Ventilation System penetrations, this LCO ensures that these penetrations are isolable by the Containment Ventilation Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve closure times specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

and the containment personnel airlocks.

INSERT 2

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel

(continued)

APPLICABILITY (continued)

assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Ventilation Isolation System not capable of automatic actuation when the purge and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment ventilation isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1 (continued)

of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

in excess of those recommended by Standard Review Plan Section 15.7.4 (Reference 3).

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. LCO 3.3.6, Containment Ventilation Isolation Instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. "Use of Silicone Sealant to Maintain Containment Integrity - ITS," GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.

2. Watts Bar FSAR, Section 15.4.5, "Design Basis Fuel Handling Accidents."

3. NUREG-0800, Standard Review Plan, Section 15.7.4, "Radiological Consequences of Fuel Handling Accidents," Rev. 1, July 1981.

4. **Generic Letter 88-17, "Loss of Decay Heat Removal"**

INSERT

ENCLOSURE 3

TENNESSEE VALLEY AUTHORITY
WBN UNIT 1 - DOCKET NO. 390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE 99-09
REVISED PAGES

I. AFFECTED PAGE LIST

3.9-6
B 3.9-12
B 3.9-13
B 3.9-14
B 3.9-15
B 3.9-16

II. REVISED PAGES

See Attached

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts;

b. One door in each air lock closed; or capable of being closed provided ABGTS is OPERABLE in accordance with TS 3.7.12; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Containment Vent Isolation System.

NOTE

Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls provided ABGTS is OPERABLE in accordance with TS 3.7.12.

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend CORE ALTERATIONS. AND A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately Immediately

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

BASES

BACKGROUND

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain capable of being closed.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits.

(continued)

BASES

BACKGROUND (continued)

The Reactor Building Purge Ventilation System operates to supply outside air into the containment for ventilation and cooling or heating, to equalize internal and external pressures, and to reduce the concentration of noble gases within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. Because of their large size, the 24-inch containment lower compartment purge valves are physically restricted to ≤ 50 degrees open. The Reactor Building Purge and Ventilation System valves can be opened in MODES 5 and 6, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). In MODE 6, large air exchanges are necessary to conduct refueling operations. The normal 24-inch purge system is used for this purpose. The ventilation system must be either isolated or capable of being automatically isolated upon detection of high radiation levels within containment.

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be NRC approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during fuel movements (Ref. 1). Closure by other valves or blind flanges may be used if they are similar in capability to those provided for containment isolation. These may be constructed of standard materials and may be justified on the basis of either normal analysis methods or reasonable engineering judgment (Ref. 4).

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," and the minimum decay time of 100 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of the NRC Policy Statement.

(continued)

BASES (continued)

LCO

This LCO limits the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE Reactor Building Purge and Ventilation System penetrations, and the containment personnel airlocks. For the OPERABLE Reactor Building Purge and Ventilation System penetrations, this LCO ensures that these penetrations are isolable by the Containment Ventilation Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve closure times specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

The containment personnel airlock doors may be open during movement of irradiated fuel in the containment and during CORE ALTERATIONS provided that one door is capable of being closed in the event of a fuel handling accident and provided that ABGTS is OPERABLE in accordance with TS 3.7.12. Should a fuel handling accident occur inside containment, one personnel airlock door will be closed following an evacuation of containment. The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident, and 3) the ABGTS is OPERABLE in accordance with TS 3.7.12. Operability of ABGTS is required to alleviate the consequences of a FHA inside containment resulting in leakage of airborne radioactive material past the open airlock or penetration flow paths prior to their closure.

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

(continued)

BASES (continued)

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Ventilation Isolation System not capable of automatic actuation when the purge and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment ventilation isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section 15.7.4 (Reference 3).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. LCO 3.3.6, Containment Ventilation Isolation Instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. "Use of Silicone Sealant to Maintain Containment Integrity - ITS," GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.

2. Watts Bar FSAR, Section 15.4.5, "Design Basis Fuel Handling Accidents."

3. NUREG-0800, Standard Review Plan, Section 15.7.4, "Radiological Consequences of Fuel Handling Accidents," Rev. 1, July 1981.

4. Generic Letter 88-17, "Loss of Decay Heat Removal"

ENCLOSURE 4

TENNESSEE VALLEY AUTHORITY
WBN UNIT 1 - DOCKET NO. 390 - TS CHANGE NO. 99-09

LIST OF COMMITMENTS

1. WBN procedure(s) will be revised to include a requirement to initiate an auxiliary building isolation (ABI) signal in the event a fuel handling accident occurs inside containment with the personnel airlock doors open or the annulus open to the auxiliary building.

2. WBN procedure(s) will provide administrative controls to ensure that appropriate personnel will maintain an awareness of the open status of the personnel airlocks and penetrations flow paths during core alterations and movement of irradiated fuel assemblies within containment.

3. For the open airlock doors, the administrative controls will ensure that the number of lines and hoses that run through the airlock doorways are controlled to ensure timely door closure. The administrative controls will clearly identify the method and responsibility for disconnecting these lines and provisions for venting and draining if necessary. Quick disconnects will be utilized for lines and hoses routed through the doorway. These disconnects will be located near the airlock doorway to allow timely closure of the doors. TVA's controls will ensure that these lines and hoses do not serve any personnel or equipment safety function that would be jeopardized if the service is disconnected.

4. WBN procedure(s) will provide administrative controls to ensure that specified individuals will be designated and readily available to close the open personnel airlock. In the event of a FHA inside containment, one personnel airlock door will be closed within 15 minutes after the accident.

5. WBN procedure(s) will provide administrative controls to ensure that specified individuals will be designated and readily available to isolate open penetration flows paths in the event of a FHA inside containment. Isolation of the penetration flow paths is required within 15 minutes.