Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-17-131

January 5, 2018

10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: Watts Bar Nuclear Plant Units 1 and 2 License Amendment Request to Modify Technical Specification (TS) 3.6.3, "Containment Isolation Valves," Surveillance Requirement 3.6.3.5 (WBN-TS-17-01)

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting for Nuclear Regulatory Commission (NRC) approval, a request for an amendment to Facility Operating License Nos. NPF-90 and NPF-96 for the Watts Bar Nuclear Plant (WBN) Unit 1 and Unit 2, respectively.

The proposed license amendment request (LAR) revises the WBN Units 1 and 2 Technical Specification (TS) 3.6.3, "Containment Isolation Valves," Surveillance Requirement (SR) 3.6.3.5 and associated Bases. Specifically, the proposed change would revise SR 3.6.3.5 for the containment purge valves to revise the frequency from "184 days AND Within 92 days after opening the valve" to "In accordance with the Containment Leakage Rate Testing Program." The WBN Containment Leakage Rate Testing Program is described in TS 5.7.2.19, "Containment Leakage Rate Testing Program," and implemented in accordance with the 10 CFR Part 50, Appendix J, Option B, and Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

The enclosure to this letter contains the results of past leak rate tests for the valves controlled by this SR. These test results show no adverse leakage results have occurred for the WBN Containment Purge Air System containment isolation valves.

The enclosure provides a description of the proposed changes, technical evaluation of the proposed changes, regulatory evaluation, and a discussion of environmental considerations. Attachments 1, 2, 3, and 4 to the enclosure provide the existing WBN TS and Bases pages marked-up to show the proposed changes. Attachments 5, 6, 7, and 8 to the enclosure provide the existing WBN TS and Bases pages retyped to show the proposed changes.

Changes to the existing TS Bases are provided for information only and will be implemented under the Technical Specification Bases Control Program.

The WBN Plant Operations Review Committee and the TVA Nuclear Safety Review Board have reviewed this proposed change and determined that operation of WBN Units 1 and 2 in accordance with the proposed change will not endanger the health and safety of the public. TVA has determined that there are no significant hazards consideration associated with the proposed change and that the TS change qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee Department of Environment and Conservation.

TVA requests approval of the proposed TS change within 12 months of the date of this letter with implementation within 30 days following NRC approval.

There are no new regulatory commitments made in this letter. Please address any questions regarding this request to Mr. Edward D. Schrull at (423) 751-3850.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 5th day of January 2018.

Respectfully,

J. W. Shea
Vice President, Nuclear Regulatory Affairs and Support Services

cc (see Page 3)

Enclosure:

Evaluation of Proposed Change

cc (Enclosure):
NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Sequoyah Nuclear Plant
NRC Project Manager – Sequoyah Nuclear Plant
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRC Project Manager – Watts Bar Nuclear Plant
Director, Division of Radiological Health - Tennessee State Department of Environment and Conservation (w/o enclosure)

Enclosure
Evaluation of Proposed Change

Subject: **Watts Bar Nuclear Plant Units 1 and 2 License Amendment Request to Modify Technical Specification (TS) 3.6.3, "Containment Isolation Valves," Surveillance Requirement 3.6.3.5 (WBN-TS-17-01)**

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Enclosure
Evaluation of Proposed Change

1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Facility Operating License (OL) Nos. NPF-90 and NPF-96 for the TVA Watts Bar Nuclear Plant (WBN) Units 1 and 2, respectively.

The proposed Technical Specification (TS) amendment revises the WBN Units 1 and 2 TS 3.6.3, "Containment Isolation Valves," Surveillance Requirement (SR) 3.6.3.5 and associated Bases to change the frequency to "In accordance with the Containment Leakage Rate Testing Program." The WBN Containment Leakage Rate Testing Program is described in TS 5.7.2.19, "Containment Leakage Rate Testing Program," and implemented in accordance with the Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix J, Option B, and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. RG 1.163 allows a nominal test interval of 30 months for containment purge and vent valves. The SR 3.6.3.5 Bases are also revised to reflect the changes.

As shown in Section 3.0 of this enclosure, the WBN Unit 1 containment purge valves have a successful operating history. WBN Unit 2 received its OL on October 22, 2015; therefore, the corresponding WBN Unit 2 containment purge valves do not have the same amount of operating experience (OE) as the WBN Unit 1 valves. However, as shown in Section 3.0 of this enclosure, the leak rate testing that has been performed for the WBN Unit 2 containment purge valves has been successful. Additionally, the WBN Unit 2 containment purge valves are the same design as WBN Unit 1 containment purge valves that have a demonstrated OE.

2.0 DETAILED DESCRIPTION

2.1 PROPOSED CHANGES

The proposed change revises WBN Units 1 and 2 SR 3.6.3.5 to change the frequency from "184 days AND Within 92 days after opening the valve" to "In accordance with the Containment Leakage Rate Testing Program."

Attachments 1, 2, 3, and 4 to the enclosure provide the existing WBN TS and Bases pages marked-up to show the proposed changes. Attachments 5, 6, 7, and 8 to the enclosure provide the existing WBN TS and Bases pages retyped to show the proposed changes. Changes to the existing TS Bases are provided for information only and will be implemented under the Technical Specification Bases Control Program.

2.2 CONDITION INTENDED TO RESOLVE

The current SR 3.6.3.5 frequency requires the containment purge valves to be leak-rate tested every 184 days and within 92 days after opening the valves. Revising this frequency to be in accordance with the Containment Leakage Rate Testing Program will result in decreased radiological exposure to personnel (approximately a total of 16 mr for each SR performance) and reduces the safety risk associated with performing this SR in the WBN Unit 1 and Unit 2 Annulus.

2.3 BACKGROUND FOR WBN UNIT 1 AND UNIT 2 SR 3.6.3.5

The current SR 3.6.3.5 for WBN Units 1 and 2 is the same as that contained in the original WBN Unit 1 OL (Reference 1) and the original WBN Unit 2 OL (Reference 2).

3.0 TECHNICAL EVALUATION

Section 3.1 contains regulatory background information related to the containment purge valves. Section 3.2 contains an evaluation of the proposed TS changes. Section 3.3 contains a description of the affected systems.

3.1 REGULATORY BACKGROUND INFORMATION

The following information was derived from References 1 through 4.

Prior to 1995, the regulations in 10 CFR Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," required that the containment isolation valves, including containment purge and vent valves, be subjected to local leakage rate tests at every refueling outage, but not to exceed about three years for Type A testing and two years for Type B and C testing. Compliance with 10 CFR, Part 50, Appendix J, provides assurance that the leakage rate of the containment, including those systems and components which penetrate the containment, does not exceed the allowable leakage rate specified in the TS. The allowable leakage rate is determined so that the leakage rate assumed in the safety analyses is not exceeded.

However, in the 1970s, the Nuclear Regulatory Commission (NRC) determined that containment purge and vent valves were, as a class, a special problem in terms of leakage rate. Experience had shown that containment purge and vent valves with resilient seals were more susceptible than other containment isolation valves to degradation caused by environmental factors (e.g., temperature extremes and changes in humidity and barometric pressure) and mechanical factors (e.g., wear and tear and hardening of resilient seals due to aging and exposure to radiation). This degradation not only could cause high and rapidly increasing leakage rates, but the radiological consequences of such leaks were more significant than for other valves because of the typically large diameters of the containment purge and vent valves and the direct connection they provided between the containment atmosphere and the outside environment.

As part of the resolution of Generic Issue B-20 (also known as Multi-Plant Action MPA-B020), “Containment Leakage Due to Seal Deterioration,” the NRC decided to increase the frequency of local leakage rate testing of containment purge and vent valves, beyond the frequency required by Appendix J (additional background may be found in IE Circular 77-11, "Leakage of Containment Isolation Valves with Resilient Seals," dated September 6, 1977). This change would limit the time during which the valves might be inoperable due to excessive leakage and make it more likely that a licensee would catch and correct advancing degradation before it became extreme. Although there was some variation, a typical testing arrangement was to have “passive” valves (those not opened during plant operation) tested every six months, and “active” valves (those opened during plant operation) tested every three months. These frequencies are essentially the current testing arrangement at WBN, where the test interval is 184 days if the valves have not been opened and 92 days for valves that have been opened.

However, the NRC did not implement the increased testing frequencies through regulations but rather through plant TS. Appendix J does not contain any special requirements for containment purge and vent valves, and the three and six month tests are not Appendix J tests per se, although the same tests are usually used to fulfill Appendix J requirements when they come due.

On September 26, 1995, the NRC revised Appendix J to add a new, performance-based option for testing, called Option B. The NRC staff also published RG 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which was developed as a method acceptable to the NRC for implementing Option B. RG 1.163 states that the Nuclear Energy Institute (NEI) guidance document NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995, provides methods acceptable to the NRC for complying with Option B, with four exceptions which are described therein. WBN Units 1 and 2 TS 5.7.2.19 requires compliance with the provisions of RG 1.163.

However, RG 1.163 does not allow for the containment purge and vent valves to go onto an extended interval; they must remain on the nominal 30-month interval. This interval takes into consideration the past operating experience and the safety significance of the large diameter and direct connection between the containment atmosphere and the outside environment. Also, although RG 1.163 discusses a 30-month interval, it still does not directly affect the more frequent (three and six month) tests contained in the plant TS, which, as mentioned before, go beyond the requirements of Appendix J.

Subsequent to the problems observed in the 1970s, the nuclear industry has made considerable strides in correcting the deficiencies of containment purge and vent valves with resilient seals. Improved seal materials, quality control, and modifications of equipment and environmental conditions have largely corrected valve deficiencies in many plants. Additionally, several plants have requested, and the NRC has granted, TS changes to eliminate the more frequent testing requirements, allowing testing to be performed in accordance with the Containment Leakage Rate Program (References 1 through 4). The NRC staff has granted these reliefs on the basis of good valve performance demonstrated by plant-specific historical leakage rate testing results.

3.2 TECHNICAL ANALYSIS OF THE PROPOSED TS CHANGES

Each WBN Unit 1 and 2 Containment Purge System contains ten containment penetrations (i.e., X-4, X-5, X-6, X-7, X-9A, X-9B, X-10A, X-10B, X-11, and X-80). Each penetration contains redundant containment isolation valves. The valves are pneumatically operated POSI-SEAL butterfly valves with resilient seals. During normal plant operations, these valves are normally closed except containment penetration X-80 (containment vent penetration), which is normally open. Purge air is placed in service as needed to conduct containment purging operations in Modes 1 through 4 and during cold shutdown and refueling activities as needed.

Table 1 provides the last ten years of as-found leak rate history of the Unit 1 Containment Purge System valves. Table 2 provides the entire history of Unit 2 Containment Purge System valves. The information in Table 1 and 2 is obtained from TVA surveillance Instructions 1/2-SI-30-701, “Containment Isolation Valve Local Leak Rate Test Purge Air,” in accordance with the frequency specified in WBN Units 1 and 2 SR 3.6.3.5. The leak rates for the Containment Purge System valves listed in Tables 1 and 2 are categorized as “As Found” because no work has been performed on these valves. Therefore, the “As Found” value is also used as the “As Left” value in the calculation for total leakage (see Table 4).

Although the as-found leak rate history for the Unit 2 Containment Purge System containment isolation valves is limited, the long term leakage performance of these valves is expected to be similar to their Unit 1 counterparts, because they are the same design including manufacturer and model number as shown on Table 3.

The administrative limit for the Containment Purge System valves is 12.32 standard cubic feet per hour (scfh). The administrative limit came from the original WBN Technical Specification limit of 0.05La (12.32 scfh). Since initial startup for Unit 1 (1996) and Unit 2 (2016), this Administrative Limit has never been exceeded.

The as-found leak rate history of these valves supports extending the test interval beyond the current frequency of 184 days and within 92 days of any opening to the NRC Regulatory Guide 1.163 recommended frequency of once every 30 months.

Table 4 provides a comparison of the Containment Purge System valve leakage to the total combined leakage. The information in Table 4 is obtained from TVA surveillance Instructions 1/2-SI-0-700, "Primary Containment Total Leak Rate," in accordance with the frequency specified in WBN Units 1 and 2 SRs 3.6.1.1, "Containment," and 3.6.3.8, "Containment Isolation Valves."

Table 5 shows the approximate number of times that the Containment Purge System valves have been cycled per year on a per unit basis. The information in Table 5 is based on:

- The stroke testing of the Containment Purge System valves as part of the Inservice Testing Program in accordance with TVA surveillance Instructions 1/2-SI-30-901-A, "Valve Full Stroke Exercising During Plant Operation - Ventilation (Train A)," 1/2-SI-30-901-B, "Valve Full Stroke Exercising During Plant Operation - Ventilation (Train B), 1/2-SI-30-902-A, "Ventilation System Valve Position Indication Verification Train A," and 1/2-SI-30-902-B, "Ventilation System Valve Position Indication Verification Train B."
- Operation of the Containment Purge Valve System in accordance with TVA system operating instruction 1/2-SOI-30.02, "Containment Purge System."

The WBN Containment Leak Rate Test Program requires a component performance evaluation, cause determination, and evaluation of impact on the total containment leak rate for any leak rate tests that exceed the administrative limit. Exceeding the leakage administrative limits requires the generation of a Condition Report which will receive an operability determination in accordance with TVA procedures NEDP-22, "Operability Determinations and Functional Evaluations," and OPDP-8, "Operability Determination Process and Limiting Conditions for Operation Tracking." This is required by the TVA Corrective Action Program.

3.3 SYSTEM DESCRIPTION

A description of the relevant portions of the WBN reactor trip and engineered safety features actuation systems are presented below as background for the evaluation of the proposed changes.

3.2.1 Reactor Building Purge Ventilation System

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 and their exposure to higher containment pressure during accident conditions, the containment lower compartment purge isolation valves are physically restricted to $\leq$ 50 degrees open. Because the valves used in the Reactor Building Purge Ventilation System are designed to meet the requirements for automatic containment isolation valves, these valves may be opened as needed in Modes 1, 2, 3 and 4.

3.2.2 Containment Isolation Valves

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on a containment isolation signal or which are normally closed. These isolation devices are either passive or active (automatic). Manual valves, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close without operator action following an accident, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses. One of these barriers may be a closed system. These barriers (typically containment isolation valves) make up the Containment Isolation System.

Automatic isolation signals are produced during accident conditions. Containment Phase "A" isolation occurs upon receipt of a safety injection signal. The Phase "A" isolation signal isolates nonessential process lines in order to minimize leakage of fission product radioactivity. Containment Phase "B" isolation occurs upon receipt of a containment pressure High-High signal and isolates the remaining process lines, except systems required for accident mitigation. In addition to the isolation signals listed above, the purge and exhaust valves receive an isolation signal on a containment high radiation condition. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated from the environment in the event of a release of fission product radioactivity to the containment atmosphere as a result of a Design Basis Accident (DBA).

The operability requirements for the containment isolation valves help ensure that containment is isolated within the time limits assumed in the safety analyses. Therefore, the operability requirements provide assurance that the containment function assumed in the safety analyses will be maintained.

4.0 REGULATORY EVALUATION

4.1 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.36, “Technical Specifications,” requires that the TS include limiting conditions for operation, which are the lowest functional capability or performance levels of equipment required for safe Operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TS until the condition can be met.

4.1.1 Regulations and Regulatory Guidance

The WBN Containment Leakage Rate Program is implemented in accordance with 10 CFR Part 50, Appendix J, Option B and RG 1.163, which allows a nominal test interval of 30 months for containment purge and vent valves. The proposed change is consistent with 10 CFR Part 50, Appendix J, Option B and RG 1.163.

4.1.2 General Design Criteria

As noted in the WBN dual-unit updated final safety analysis report (UFSAR) Section 3.1.1, WBN was designed to meet the intent of the "Proposed General Design Criteria for Nuclear Power Plant Construction Permits" published in July 1967. The WBN construction permit was issued in January 1973. The WBN Unit 2 UFSAR, however, addresses the NRC General Design Criteria (GDC) published as Appendix A to 10 CFR 50 in July 1971, including Criterion 4 as amended October 27, 1987.

The WBN UFSAR contains these GDC followed by a discussion of the design features and procedures that meet the intent of the criteria. The relevant GDC are described below.

Criterion 16 - Containment Design

Reactor containment and associated systems shall be provided to establish an essentially leaktight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.

Conformance with GDC 16 is described in Section 3.1.2.2 of the WBN dual-unit UFSAR.

Criterion 50 - Containment Design Basis

The reactor containment structure, including access openings, penetrations, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and, with sufficient margin, the calculated pressure and temperature conditions resulting from any LOCA.

This margin shall reflect consideration of (1) the effects of potential energy sources which have not been included in the determination of the peak conditions, such as energy in steam generators and energy from metal-water and other chemical reactions that may result from degraded emergency core cooling functioning, (2) the limited experience and experimental data available for defining accident phenomena and containment responses, and (3) the conservatism of the calculational model and input parameters.

Conformance with GDC 50 is described in Section 3.1.2.5 of the WBN dual-unit UFSAR.

Criterion 52 - Capability for Containment Leakage Rate Testing

The reactor containment and other equipment which may be subjected to containment test conditions shall be designed so that periodic integrated leakage rate testing can be conducted at containment design pressure.

Conformance with GDC 52 is described in Section 3.1.2.5 of the WBN dual-unit UFSAR. Details concerning the conduct of periodic integrated leakage rate tests are in Section 6.2 of the WBN dual-unit UFSAR.

Criterion 55 - Reactor Coolant Pressure Boundary Penetrating Containment

Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

1. One locked closed isolation valve inside and one locked closed isolation valve outside containment; or
2. One automatic isolation valve inside and one locked closed isolation valve outside containment; or
3. One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or
4. One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to containment as practical, and automatic isolation valves shall be designed to take the position that provides greater safety upon loss of actuating power.

Other appropriate requirements to minimize the probability or consequences of an accidental rupture of these lines or of lines connected to them shall be provided as necessary to assure adequate safety. Determination of the appropriateness of these requirements, such as higher quality in design, fabrication, and testing, additional provisions for inservice inspection, protection against more severe natural phenomena, and additional isolation valves and containment, shall include consideration of the population density, use characteristics, and physical characteristics of the site environs.

Conformance with GDC 55 is described in Section 3.1.2.5 of the WBN dual-unit UFSAR.

Criterion 56 - Primary Containment Isolation

Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

1. One locked closed isolation valve inside and one locked closed isolation valve outside containment; or
2. One automatic isolation valve inside and one locked closed isolation valve outside containment; or
3. One locked closed isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment; or
4. One automatic isolation valve inside and one automatic isolation valve outside containment. A simple check valve may not be used as the automatic isolation valve outside containment.

Isolation valves outside containment shall be located as close to containment as practical, and automatic isolation valves shall be designed to take the position that provides greater safety upon loss of actuating power.

Conformance with GDC 56 is described in Section 3.1.2.5 of the WBN dual-unit UFSAR. Additional details can be found in Section 6.2 of the WBN dual-unit UFSAR.

There will be no changes to the WBN design such that compliance with any of the regulatory requirements above would come into question. As such, WBN Unit 2 will continue to comply with the applicable regulatory requirements.

4.1.3 Conclusion

The proposed change revises SR 3.6.3.5 to change the frequency from "184 days AND Within 92 days after opening the valve" to "In accordance with the Containment Leakage Rate Testing Program." The WBN Containment Leakage Rate Testing Program is described in TS 5.7.2.19 and implemented in accordance with the 10 CFR) Part 50, Appendix J, Option B, and RG 1.163, which allows a nominal test interval of 30 months for containment purge and vent valves. As shown in Section 3.0 of this enclosure, the WBN Unit 1 containment purge valves have a successful operating history.

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) approval of the traveler will not be inimical to the common defense and security or to the health and safety of the public

4.2 PRECEDENT

The proposed TS change is similar to those approved by NRC for the following nuclear power plants that also revised their SR frequency for the containment purge valves to be in accordance with the Containment Leakage Rate Testing Program:

- McGuire Nuclear Station, Units 1and 2 (Reference 3)
- Catawba Nuclear Station, Units 1 and 2 (Reference 4)
- River Bend Station, Unit 1 (Reference 5)
- Waterford Steam Electric Station, Unit 3 (Reference 6)

4.3 SIGNIFICANT HAZARDS CONSIDERATION

The Tennessee Valley Authority (TVA) proposes to revise the Watts Bar Nuclear Plant (WBN) Unit 1 and Unit 2 Technical Specification (TS) 3.6.3, “Containment Isolation Valves,” Surveillance Requirement (SR) 3.6.3.5 and associated Bases to change the frequency to “In accordance with the Containment Leakage Rate Testing Program.” The WBN Containment Leakage Rate Testing Program is described in TS 5.7.2.19, “Containment Leakage Rate Testing Program,” and implemented in accordance with the Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix J, Option B, and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. RG 1.163 allows a nominal test interval of 30 months for containment purge and vent valves.

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment,” as discussed below:

1. *Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated*?

   Response: No.

   The proposed change deletes the augmented testing requirement for these containment isolation valves and allows the surveillance intervals to be set in accordance with the Containment Leakage Rate Testing Program. This change does not affect the system function or design. The purge valves are not an initiator of any previously analyzed accident. Leakage rates do not affect the probability of the occurrence of any accident. Operating history has demonstrated that the valves do not degrade and cause leakage as previously anticipated. Because these valves have been demonstrated to be reliable, these valves can be expected to perform the containment isolation function as assumed in the accident analyses. The proposed changes do not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Further, the proposed changes do not increase the types or amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures. The proposed changes do not significantly increase the probability of an accident and are consistent with safety analysis assumptions and resultant consequences.

   Therefore, the changes do not increase the probability or consequences of an accident previously evaluated.

2. *Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?*

   Response: No.

   This change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing any normal plant operation. The change does not alter assumptions made in the safety analyses or licensing basis. Extending the test intervals has no influence on, nor does it contribute in any way to, the possibility of a new or different kind of accident or malfunction from those previously analyzed. No change has been made to the design, function, or method of performing leakage testing. Leakage acceptance criteria have not changed. No new

accident modes are created by extending the testing intervals. No safety-related equipment or safety functions are altered as a result of this change.

Therefore, the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The only margin of safety that has the potential of being impacted by the proposed change involves the offsite dose consequences of postulated accidents, which are directly related to the containment leakage rate. The proposed change does not alter the method of performing the tests nor does it change the leakage acceptance criteria. Sufficient data has been collected to demonstrate these resilient seals do not degrade at an accelerated rate. Because of this demonstrated reliability, this change will provide sufficient surveillance to determine an increase in the unfiltered leakage prior to the leakage exceeding that assumed in the accident analysis.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92 (c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 CONCLUSIONS

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NRC Letter to TVA, "Issuance of Facility Operating License No. NPF-90, Watts Bar Nuclear Plant, Unit 1 (TAC M94025)," dated February 7, 1996 (ML052930169 and ML080290360)
2. NRC letter to TVA, “Issuance of Facility Operating License No. NPF-96, Watts Bar Nuclear Plant Unit 2,” dated October 22, 20015 (ML15251A587)
3. NRC letter to Duke Energy Corporation, “McGuire Nuclear Station, Units 1and 2 Re: Issuance of Amendments Regarding Option B of Appendix J for Local Leakage Rate Testing (TAC Nos. MB3565 and MB3566), dated September 4, 2002 (ML022540102)
4. NRC letter to Duke Energy Corporation, “Catawba Nuclear Station, Units 1 and 2 Re: Issuance of Amendments (TAC Nos. MC3630 and MC3631),” dated June 10, 2005 (ML051590203)
5. NRC letter to Entergy Operations, “River Bend Station, Unit 1 - Issuance of Amendment Re: Leakage Rate Testing of Containment Purge Valves (TAC No. MD3025),” dated May 3, 2007 (ML051590203)
6. NRC letter to Entergy Operations, “Waterford Steam Electric Station, Unit 3 - Issuance of Amendment Re: Leakage Rate Testing of Containment Purge Valves (TAC No. MD2711),” dated May 23, 2007 (ML071290447)

Enclosure

Table 1
WBN Unit 1 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-4			Penetration X-5			Penetration X-6			Penetration X-7			Penetration X-9A		
1-FCV-30-56/1-FCV-30-57			1-FCV-30-58/1-FCV-30-59			1-FCV-30-50/1-FCV-30-51			1-FCV-30-52/1-FCV-30-53			1-FCV-30-7/1-FCV-30-8		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
9/1/2017	As Found	0.196	9/1/2017	As Found	0.149	9/1/2017	As Found	0.257	9/1/2017	As Found	2.68	9/3/2017	As Found	0.09
6/7/2017	As Found	0.33	6/7/2017	As Found	0.112	6/8/2017	As Found	0.166	6/8/2017	As Found	1.55	6/8/2017	As Found	0.258
3/15/2017	As Found	1.02	3/15/2017	As Found	0.082	3/15/2017	As Found	0.092	3/15/2017	As Found	2.64	3/15/2017	As Found	0.116
12/23/2016	As Found	0	12/23/2016	As Found	0	12/24/2016	As Found	0	12/24/2016	As Found	1.51	12/24/2016	As Found	0
10/8/2016	As Found	0.224	10/8/2016	As Found	0.235	10/9/2016	As Found	0.136	10/9/2016	As Found	1.7905	10/9/2016	As Found	0.069
7/10/2016	As Found	0.0297	7/9/2016	As Found	0.008	7/10/2016	As Found	0.0148	7/10/2016	As Found	0.1737	7/9/2016	As Found	0.008
4/19/2016	As Found	0.636	4/19/2016	As Found	0.0127	4/19/2016	As Found	0.189	4/18/2016	As Found	1.888	4/19/2016	As Found	0.1992
1/22/2016	As Found	0.4111	1/21/2016	As Found	0.1165	1/22/2016	As Found	0.1483	1/22/2016	As Found	1.852	1/21/2016	As Found	0.2034
11/5/2015	As Found	0.1617	11/5/2015	As Found	0.0773	11/5/2015	As Found	0.1562	11/5/2015	As Found	1.8794	11/5/2015	As Found	0.1551
8/18/2015	As Found	0	8/18/2015	As Found	0.1483	8/18/2015	As Found	0	8/18/2015	As Found	1.623	8/18/2015	As Found	0.5042
5/20/2015	As Found	0.466	5/20/2015	As Found	0	5/20/2015	As Found	0.423	5/20/2015	As Found	2.796	5/20/2015	As Found	0.313
2/19/2015	As Found	0.0105	2/19/2015	As Found	0	2/19/2015	As Found	0.2775	2/19/2015	As Found	1.97	2/19/2015	As Found	0.2034
11/25/2014	As Found	0.0042	11/25/2014	As Found	0	11/25/2014	As Found	0	11/25/2014	As Found	0.8899	11/25/2014	As Found	0.0783
9/4/2014	As Found	0.016	9/4/2014	As Found	0.063	9/4/2014	As Found	0	9/4/2014	As Found	2.118	9/4/2014	As Found	0.103
6/12/2014	As Found	0.078	6/12/2014	As Found	0.057	6/12/2014	As Found	0.26	6/12/2014	As Found	0.697	6/12/2014	As Found	0.121
4/15/2014	As Found	0.8476	4/14/2014	As Found	0.0424	4/14/2014	As Found	0.0148	4/14/2014	As Found	2.5003	4/19/2014	As Found	0.0127
1/23/2014	As Found	0.286	1/23/2014	As Found	0.078	1/23/2014	As Found	0.139	1/23/2014	As Found	1.906	1/23/2014	As Found	0.175
10/29/2013	As Found	0.225	10/29/2013	As Found	0.087	10/29/2013	As Found	0.222	10/29/2013	As Found	0.75	10/29/2013	As Found	0.222
8/7/2013	As Found	0.095	8/7/2013	As Found	0	8/7/2013	As Found	0.133	8/7/2013	As Found	1.886	8/7/2013	As Found	0.074
5/16/2013	As Found	0.064	5/16/2013	As Found	0.051	5/16/2013	As Found	0.263	5/16/2013	As Found	1.971	5/16/2013	As Found	0.051
2/20/2013	As Found	0.093	2/20/2013	As Found	0.059	2/20/2013	As Found	0.163	2/20/2013	As Found	2.118	2/20/2013	As Found	0.118
11/27/2012	As Found	0.233	11/27/2012	As Found	0.057	11/27/2012	As Found	0.245	11/27/2012	As Found	2.267	11/27/2012	As Found	0.161
9/7/2012	As Found	0.0508	9/7/2012	As Found	0.0635	9/7/2012	As Found	0.036	9/7/2012	As Found	2.0341	9/7/2012	As Found	0.0297
6/21/2012	As Found	0.184	6/21/2012	As Found	0.042	6/22/2012	As Found	0	6/22/2012	As Found	2.182	6/22/2012	As Found	0
3/22/2012	As Found	0.2627	3/22/2012	As Found	0	3/22/2012	As Found	0.1567	3/22/2012	As Found	2.0129	3/22/2012	As Found	0
1/4/2012	As Found	0.101	1/4/2012	As Found	0.025	1/4/2012	As Found	0.101	1/4/2012	As Found	2.224	1/4/2012	As Found	0.067
10/11/2011	As Found	0.2479	10/11/2011	As Found	0.0211	10/11/2011	As Found	0.0127	10/11/2011	As Found	2.3731	10/11/2011	As Found	0.0423

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Table 1
WBN Unit 1 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-4			Penetration X-5			Penetration X-6			Penetration X-7			Penetration X-9A		
1-FCV-30-56/1-FCV-30-57			1-FCV-30-58/1-FCV-30-59			1-FCV-30-50/1-FCV-30-51			1-FCV-30-52/1-FCV-30-53			1-FCV-30-7/1-FCV-30-8		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
7/20/2011	As Found	0.0678	7/21/2011	As Found	0.0105	7/21/2011	As Found	0.0318	7/21/2011	As Found	2.1188	7/21/2011	As Found	0.0466
4/21/2011	As Found	0	4/21/2011	As Found	0	4/21/2011	As Found	0	4/26/2011	As Found	1.34	4/21/2011	As Found	0
2/3/2011	As Found	0.364	2/3/2011	As Found	0.0635	2/3/2011	As Found	0.1271	2/3/2011	As Found	2.415	2/3/2011	As Found	0.0444
11/9/2010	As Found	0	11/9/2010	As Found	0.106	11/9/2010	As Found	0.067	11/9/2010	As Found	2.161	11/9/2010	As Found	0.0953
8/20/2010	As Found	0.589	8/20/2010	As Found	0.1907	8/20/2010	As Found	0.7733	8/20/2010	As Found	2.8604	8/20/2010	As Found	0.0847
5/26/2010	As Found	0.4789	5/26/2010	As Found	0	5/26/2010	As Found	0.578	5/26/2010	As Found	3.072	5/26/2010	As Found	0
3/9/2010	As Found	0.1356	3/9/2010	As Found	0	3/9/2010	As Found	0.3835	3/9/2010	As Found	2.4579	3/9/2010	As Found	0.0911
12/10/2009	As Found	0.2246	12/10/2009	As Found	0.1123	12/10/2009	As Found	0	12/10/2009	As Found	2.3096	12/10/2009	As Found	0.0424
9/17/2009	As Found	0.1165	9/17/2009	As Found	0	9/17/2009	As Found	0.0953	9/17/2009	As Found	2.6274	9/17/2009	As Found	0.0953
6/18/2009	As Found	0	6/18/2009	As Found	0	6/18/2009	As Found	0.1589	6/18/2009	As Found	2.9664	6/18/2009	As Found	0
4/9/2009	As Found	0.0848	4/9/2009	As Found	0	4/9/2009	As Found	0.0297	4/9/2009	As Found	2.7545	4/9/2009	As Found	0.0318
1/8/2009	As Found	0.0445	1/8/2009	As Found	0.0529	1/8/2009	As Found	0	1/8/2009	As Found	3.03	1/8/2009	As Found	0
10/17/2008	As Found	0.0191	10/17/2008	As Found	0.1144	10/17/2008	As Found	0.1271	10/17/2008	As Found	3.1783	10/17/2008	As Found	0.0318
7/28/2008	As Found	0.0106	7/28/2008	As Found	0.0169	7/28/2008	As Found	0.0191	7/28/2008	As Found	0.8476	7/28/2008	As Found	0.1271
5/1/2008	As Found	0.1017	5/1/2008	As Found	0.0318	5/1/2008	As Found	0.142	5/1/2008	As Found	0.9196	5/1/2008	As Found	0.1843
2/7/2008	As Found	0.2907	2/7/2008	As Found	0	2/7/2008	As Found	0	2/7/2008	As Found	0	2/7/2008	As Found	0
11/16/2007	As Found	0	11/15/2007	As Found	0.017	11/15/2007	As Found	0	11/15/2007	As Found	0	11/16/2007	As Found	0.017
8/23/2007	As Found	0.0444	8/23/2007	As Found	0.0572	8/23/2007	As Found	0.1673	8/23/2007	As Found	0.0678	8/23/2007	As Found	0.0995
5/31/2007	As Found	0.509	5/31/2007	As Found	0.089	5/31/2007	As Found	0.0635	5/31/2007	As Found	0.4661	5/31/2007	As Found	0.1017
5/3/2007	As Found	0.8361	5/3/2007	As Found	0	5/3/2007	As Found	0.0573	5/3/2007	As Found	0.0435	5/3/2007	As Found	0
2/9/2007	As Found	1.8711	2/9/2007	As Found	0	2/9/2007	As Found	0.0442	2/9/2007	As Found	0.0576	2/9/2007	As Found	0

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Table 1
WBN Unit 1 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-9B			Penetration X-10A			Penetration X-10B			Penetration X-11			Penetration X-80		
1-FCV-30-9/1-FCV-30-10			1-FCV-30-14/1-FCV-30-15			1-FCV-30-16/1-FCV-30-17			1-FCV-30-19/1-FCV-30-20			1-FCV-30-37/1-FCV-30-40		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
9/3/2017	As Found	0.111	9/1/2017	As Found	1.8	9/1/2017	As Found	0.581	9/1/2017	As Found	0.105	9/3/2017	As Found	0.04
6/10/2017	As Found	0.275	6/7/2017	As Found	1.21	6/8/2017	As Found	0.265	6/7/2017	As Found	0.033	6/11/2017	As Found	0.045
3/15/2017	As Found	0.07	3/15/2017	As Found	2.48	3/15/2017	As Found	0.181	3/15/2017	As Found	0.082	3/17/2017	As Found	0.114
12/23/2016	As Found	0	12/24/2016	As Found	2.33	12/24/2016	As Found	0.12	12/24/2016	As Found	0.049	12/24/2016	As Found	0
10/8/2016	As Found	0.112	10/8/2016	As Found	0.4	10/8/2016	As Found	0.197	10/8/2016	As Found	0.189	10/9/2016	As Found	0.053
7/9/2016	As Found	0.0106	7/9/2016	As Found	0.0763	7/9/2016	As Found	0.0127	7/9/2016	As Found	0.008	7/16/2016	As Found	0.034
4/19/2016	As Found	0.2606	4/19/2016	As Found	1.877	4/19/2016	As Found	0.384	4/19/2016	As Found	0.0318	4/20/2016	As Found	0.025
1/21/2016	As Found	0.1949	1/22/2016	As Found	0.7713	1/22/2016	As Found	0.2903	1/22/2016	As Found	0.0127	1/23/2016	As Found	0.0339
11/5/2015	As Found	0.1521	11/5/2015	As Found	0	11/5/2015	As Found	0.2777	11/5/2015	As Found	0.1165	11/16/2015	As Found	0.0327
8/18/2015	As Found	0.0127	8/18/2015	As Found	0.6695	8/18/2015	As Found	0.7839	8/18/2015	As Found	0.0741	8/19/2015	As Found	0.158
5/20/2015	As Found	0.805	5/20/2015	As Found	0.805	5/20/2015	As Found	0.339	5/20/2015	As Found	0.139	5/21/2015	As Found	0.088
2/19/2015	As Found	0.072	2/19/2015	As Found	0.1356	2/19/2015	As Found	0.1123	2/19/2015	As Found	0	2/20/2015	As Found	0.0042
11/26/2014	As Found	0.5212	11/25/2014	As Found	0.0021	11/25/2014	As Found	0.2775	11/25/2014	As Found	0.0572	11/26/2014	As Found	0.0063
9/4/2014	As Found	0.298	9/4/2014	As Found	0.55	9/4/2014	As Found	0.296	9/4/2014	As Found	0.11	9/5/2014	As Found	0.029
6/12/2014	As Found	0.085	6/12/2014	As Found	0.517	6/12/2014	As Found	0.337	6/12/2014	As Found	0.108	6/13/2014	As Found	0.021
4/19/2014	As Found	0	4/18/2014	As Found	0	4/18/2014	As Found	0.2352	4/14/2014	As Found	0.0975	4/14/2014	As Found	0.0339
1/23/2014	As Found	0.082	1/23/2014	As Found	0.317	1/23/2014	As Found	0.262	1/23/2014	As Found	0.141	1/24/2014	As Found	0.084
10/29/2013	As Found	0.146	10/29/2013	As Found	0.305	10/29/2013	As Found	0.33	10/29/2013	As Found	0.218	10/30/2013	As Found	0.021
8/7/2013	As Found	0.172	8/7/2013	As Found	0.328	8/7/2013	As Found	0.182	8/7/2013	As Found	0.133	8/8/2013	As Found	0.017
5/16/2013	As Found	0.172	5/16/2013	As Found	0.233	5/16/2013	As Found	0.388	5/16/2013	As Found	0.078	5/22/2013	As Found	0.074
2/20/2013	As Found	0.139	2/21/2013	As Found	0.116	2/20/2013	As Found	0.396	2/20/2013	As Found	0.108	2/22/2013	As Found	0.0635
11/27/2012	As Found	0.328	11/27/2012	As Found	0.209	11/27/2012	As Found	0.324	11/27/2012	As Found	0.027	11/28/2012	As Found	0.021
9/7/2012	As Found	0.0381	9/7/2012	As Found	0.5932	9/7/2012	As Found	0.3072	9/7/2012	As Found	0.0529	9/8/2012	As Found	0.0105
6/22/2012	As Found	0	6/21/2012	As Found	0.286	6/21/2012	As Found	0.328	6/21/2012	As Found	0	6/21/2012	As Found	0
3/22/2012	As Found	0.2415	3/22/2012	As Found	0.1546	3/22/2012	As Found	0.0423	3/22/2012	As Found	0	3/27/2012	As Found	0
1/4/2012	As Found	0	1/4/2012	As Found	0.326	1/4/2012	As Found	0.016	1/4/2012	As Found	0	1/5/2012	As Found	0.072

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Table 1
WBN Unit 1 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-9B			Penetration X-10A			Penetration X-10B			Penetration X-11			Penetration X-80		
1-FCV-30-9/1-FCV-30-10			1-FCV-30-14/1-FCV-30-15			1-FCV-30-16/1-FCV-30-17			1-FCV-30-19/1-FCV-30-20			1-FCV-30-37/1-FCV-30-40		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
10/11/2011	As Found	0.0063	10/12/2011	As Found	0.2648	10/12/2011	As Found	0.0105	10/12/2011	As Found	0.1228	10/12/2011	As Found	0.0127
7/21/2011	As Found	0.0529	7/21/2011	As Found	0.1271	7/21/2011	As Found	0.0275	7/21/2011	As Found	0.1483	7/21/2011	As Found	0.0572
4/26/2011	As Found	0.2381	4/21/2011	As Found	0	4/21/2011	As Found	0	4/21/2011	As Found	0	4/26/2011	As Found	0
2/3/2011	As Found	0.2034	2/3/2011	As Found	0.263	2/3/2011	As Found	0.051	2/3/2011	As Found	0.059	2/9/2011	As Found	0.0593
11/9/2010	As Found	0	11/9/2010	As Found	0.099	11/9/2010	As Found	0	11/9/2010	As Found	0	11/10/2010	As Found	0.032
8/20/2010	As Found	0.0974	8/20/2010	As Found	0	8/20/2010	As Found	0.5932	8/20/2010	As Found	0	8/21/2010	As Found	0
5/26/2010	As Found	0.212	5/26/2010	As Found	0	5/26/2010	As Found	0	5/26/2010	As Found	0	5/27/2010	As Found	0
3/9/2010	As Found	0.0975	3/9/2010	As Found	0.072	3/9/2010	As Found	0	3/9/2010	As Found	0.0297	3/10/2010	As Found	0.0339
12/10/2009	As Found	0.1441	12/10/2009	As Found	0.375	12/10/2009	As Found	0	12/10/2009	As Found	0	12/11/2009	As Found	0
9/17/2009	As Found	0.0678	9/17/2009	As Found	0.0911	9/17/2009	As Found	0.0614	9/17/2009	As Found	0.0211	9/18/2009	As Found	0
6/18/2009	As Found	0	6/18/2009	As Found	0	6/18/2009	As Found	0	6/18/2009	As Found	0	6/19/2009	As Found	0
4/9/2009	As Found	0	4/9/2009	As Found	0.0212	4/9/2009	As Found	0.1293	4/9/2009	As Found	0.089	4/10/2009	As Found	0
1/8/2009	As Found	0.1102	1/8/2009	As Found	0.2755	1/8/2009	As Found	0	1/8/2009	As Found	0.0636	1/10/2009	As Found	0
10/17/2008	As Found	0.0529	10/17/2008	As Found	0.1419	10/17/2008	As Found	0.2775	10/17/2008	As Found	0.1059	10/18/2008	As Found	0.0296
7/28/2008	As Found	0.0042	7/28/2008	As Found	0.0848	7/28/2008	As Found	0.0424	7/28/2008	As Found	0.0275	7/29/2008	As Found	0.0106
5/1/2008	As Found	0.1123	5/1/2008	As Found	0.0106	5/1/2008	As Found	0.0848	5/1/2008	As Found	0.0191	5/2/2008	As Found	0.0233
2/7/2008	As Found	0.1538	2/7/2008	As Found	0	2/7/2008	As Found	0	2/7/2008	As Found	0	2/28/2008	As Found	0
11/16/2007	As Found	0	11/15/2007	As Found	0	11/15/2007	As Found	0	11/15/2007	As Found	0.0212	11/16/2007	As Found	0
8/23/2007	As Found	0.0678	8/23/2007	As Found	0.2818	8/23/2007	As Found	0.0233	8/23/2007	As Found	0.0466	8/24/2007	As Found	0
5/31/2007	As Found	0.1271	5/31/2007	As Found	0.7839	5/31/2007	As Found	0.072	5/31/2007	As Found	0.2012	5/31/2007	As Found	0.0932
5/3/2007	As Found	0	5/3/2007	As Found	1.0787	5/3/2007	As Found	0	5/3/2007	As Found	0	5/3/2007	As Found	0
2/9/2007	As Found	0	2/9/2007	As Found	0.3069	2/9/2007	As Found	0.1078	2/9/2007	As Found	0	2/9/2007	As Found	0

Table 2
WBN Unit 2 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-4			Penetration X-5			Penetration X-6			Penetration X-7			Penetration X-9A		
2-FCV-30-56/2-FCV-30-57			2-FCV-30-58/2-FCV-30-59			2-FCV-30-50/2-FCV-30-51			2-FCV-30-52/2-FCV-30-53			2-FCV-30-7/2-FCV-30-8		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
5/9/2016	As Found	4.32	5/9/2016	As Found	0.063	5/9/2016	As Found	0.102	5/9/2016	As Found	2.03	5/9/2016	As Found	0.120
8/8/2016	As Found	1.77	8/8/2016	As Found	0.181	8/8/2016	As Found	0.198	8/8/2016	As Found	0.222	8/8/2016	As Found	0.154
11/9/2016	As Found	0.044	11/9/2016	As Found	0.049	11/6/2016	As Found	0.064	11/6/2016	As Found	0.208	11/9/2016	As Found	0.059
1/14/2017	As Found	0.780	1/15/2017	As Found	0.048	1/15/2017	As Found	0.104	1/15/2017	As Found	0.175	1/17/2017	As Found	0.100
3/11/2017	As Found	0.172	3/11/2017	As Found	0.045	3/10/2017	As Found	0.035	3/10/2017	As Found	0.064	3/10/2017	As Found	0.096
7/7/2017	As Found	0.318	7/7/2017	As Found	0.117	7/7/2017	As Found	0.140	7/8/2017	As Found	0.375	7/7/2017	As Found	0.207
9/21/2017	As Found	0.308	9/21/2017	As Found	0.026	9/22/2017	As Found	0.006	9/22/2017	As Found	0.509	9/23/2017	As Found	0.240

Enclosure

Table 2
WBN Unit 2 Containment Purge Air System Containment Isolation Valves Leakage History
Administrative Limit = 12.32 scfh

Penetration X-9B			Penetration X-10A			Penetration X-10B			Penetration X-11			Penetration X-80		
2-FCV-30-9/2-FCV-30-10			2-FCV-30-14/2-FCV-30-15			2-FCV-30-16/2-FCV-30-17			2-FCV-30-19/2-FCV-30-20			2-FCV-30-37/2-FCV-30-40		
Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)	Date	Type Test	Leak Rate (scfh)
5/9/2016	As Found	0.082	5/9/2016	As Found	5.83	5/9/2016	As Found	1.51	5/9/2016	As Found	0.036	5/9/2016	As Found	0.000
8/8/2016	As Found	0.172	8/8/2016	As Found	8.84	8/8/2016	As Found	1.84	8/8/2016	As Found	0.093	8/92016	As Found	0.090
11/6/2016	As Found	0.009	11/9/2016	As Found	7.40	11/6/2016	As Found	1.74	11/6/2016	As Found	0.045	11/8/2016	As Found	0.044
1/16/2017	As Found	0.068	1/14/2017	As Found	6.11	1/16/2017	As Found	0.249	1/14/2017	As Found	0.087	1/28/2017	As Found	0.030
3/10/2017	As Found	0.000	3/10/2017	As Found	4.654	3/10/2017	As Found	0.738	3/10/2017	As Found	0.137	3/11/2017	As Found	0.128
7/8/2017	As Found	0.388	7/7/2017	As Found	5.45	7/8/2017	As Found	1.563	7/7/2017	As Found	0.000	7/6/2017	As Found	0.261
9/23/2017	As Found	0.323	9/22/2017	As Found	5.02	9/22/2017	As Found	2.077	9/21/2017	As Found	0.003	9/23/2017	As Found	0.473

Table 3 - Containment Purge Air System Valve Descriptions				
UNID	**WBN-1-FCV-030-0056**	**WBN-1-FCV-030-0057**	**WBN-2-FCV-030-0056**	**WBN-2-FCV-030-0057**
Description	CNTMT LOWER COMPARTMENT EXHAUST ISOLATION	CNTMT LOWER COMPARTMENT EXHAUST ISOLATION	CNTMT LOWER COMPARTMENT EXHAUST ISOLATION	CNTMT LOWER COMPARTMENT EXHAUST ISOLATION
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	2134-05-07-03	1134-05-07-03	2134-05-07-03	1134-05-07-03
UNID	**WBN-1-FCV-030-0058**	**WBN-1-FCV-030-0059**	**WBN-2-FCV-030-0058**	**WBN-2-FCV-030-0059**
Description	CNTMT INSTRUMENT ROOM EXHAUST ISOLATION	CNTMT INSTRUMENT ROOM EXHAUST ISOLATION	CNTMT INSTRUMENT ROOM EXHAUST ISOLATION	CNTMT INSTRUMENT ROOM EXHAUST ISOLATION
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	12	12	12	12
Manufacturer Part Number	2144-05-07-03	1144-05-07-03	2144-05-07-03	1144-05-07-03
UNID	**WBN-1-FCV-030-0050**	**WBN-1-FCV-030-0051**	**WBN-2-FCV-030-0050**	**WBN-2-FCV-030-0051**
Description	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	0R50B	1134-05-07-03	2134-05-07-03	1134-05-07-03

Table 3 - Containment Purge Air System Valve Descriptions				
UNID	**WBN-1-FCV-030-0052**	**WBN-1-FCV-030-0053**	**WBN-2-FCV-030-0052**	**WBN-2-FCV-030-0053**
Description	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION	CNTMT UPPER COMPARTMENT EXHAUST ISOLATION
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	2134-05-07-03	1134-05-07-03	2134-05-07-03	1134-05-07-03
UNID	**WBN-1-FCV-030-0007**	**WBN-1-FCV-030-0008**	**WBN-2-FCV-030-0007**	**WBN-2-FCV-030-0008**
Description	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	1134-05-07-03	2134-05-07-03	1134-05-07-03	2134-05-07-03
UNID	**WBN-1-FCV-030-0009**	**WBN-1-FCV-030-0010**	**WBN-2-FCV-030-0009**	**WBN-2-FCV-030-0010**
Description	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY	CNTMT UPPER COMPARTMENT PURGE SUPPLY
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	1134-05-07-03	2134-05-07-03	1134-05-07-03	2134-05-07-03

Table 3 - Containment Purge Air System Valve Descriptions				
UNID	**WBN-1-FCV-030-0014**	**WBN-1-FCV-030-0015**	**WBN-2-FCV-030-0014**	**WBN-2-FCV-030-0015**
Description	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	1134-05-07-03	2134-05-07-03	1134-05-07-03	2134-05-07-03
UNID	**WBN-1-FCV-030-0016**	**WBN-1-FCV-030-0017**	**WBN-2-FCV-030-0016**	**WBN-2-FCV-030-0017**
Description	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY	CNTMT LOWER COMPARTMENT PURGE SUPPLY
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	24	24	24	24
Manufacturer Part Number	1134-05-07-03	2134-05-07-03	1134-05-07-03	2134-05-07-03
UNID	**WBN-1-FCV-030-0019**	**WBN-1-FCV-030-0020**	**WBN-2-FCV-030-0019**	**WBN-2-FCV-030-0020**
Description	CNTMT INCORE INSTR ROOM PURGE SUPPLY	CNTMT INCORE INSTR ROOM PURGE SUPPLY	CNTMT INCORE INSTR ROOM PURGE SUPPLY	CNTMT INCORE INSTR ROOM PURGE SUPPLY
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	12	12	12	12
Manufacturer Part Number	1144-05-07-03	2144-05-07-03	1144-05-07-03	2144-05-07-03

Table 3 - Containment Purge Air System Valve Descriptions				
UNID	**WBN-1-FCV-030-0037**	**WBN-1-FCV-030-0040**	**WBN-2-FCV-030-0037**	**WBN-2-FCV-030-0040**
Description	CNTMT LOWER COMPARTMENT PURGE EXH PRESS RELIEF	CNTMT LOWER COMPARTMENT PURGE EXH PRESS RELIEF	CNTMT LOWER COMPARTMENT PURGE EXH PRESS RELIEF	CNTMT LOWER COMPARTMENT PURGE EXH PRESS RELIEF
Valve Type	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve	Fisher POSI-SEAL Butterfly Valve
Size Diameter (in)	8	8	8	8
Manufacturer Part Number	1144-05-07-03	1144-05-07-03	1144-05-07-03/MODEL A	2144-05-07-03

Table 4 - Comparison of the Containment Purge Air System Valve Leakage to Total Combined Leakage							
Refuel Outage	As Found Total Min Path (scfh)	Purge Air Valves As Found Total Min Path (scfh)	Approximate Percentage of Purge Air Valves As Found to the Acceptance Criteria 0.6La (%)	As Left Total Max Path (scfh)	Purge Air Valves As Left Total Max Path (scfh)	Approximate Percentage of Purge Air Valves As Left to the Acceptance Criteria 0.6La (%)	Acceptance Criteria 0.6La (scfh)
Unit 1							
U1R10	7.9685	0.7891	0.55	22.4464	1.5781	1.1	144.54
U1R11	19.3338	1.6082	1.1	22.9949	3.2159	2.2	147.6
U1R12	20.3332	1.8924	1.3	27.3583	3.7844	2.6	147.6
U1R13	5.5670	1.9855	1.35	16.5993	3.9710	2.7	147.6
U1R14	5.3001	3.4580	2.34	15.3089	6.9070	4.7	147.6
Unit 2							
U2 Startup Testing	N/A	N/A	N/A	15.8592	8.1850	51.6	147.6
U2R1	12.4980	4.4925	3.05	31.0185	8.9850	6.1	147.6

Table 5 Average Number of Times the Containment Purge Air System Valves have been Cycled per Year		
Penetration	Valves	Number of Strokes
X-4	1/2-FCV-30-56	23
	1/2-FCV-30-57	23
X-5	1/2-FCV-30-58	8
	1/2-FCV-30-59	8
X-6	1/2-FCV-30-50	20
	1/2-FCV-30-51	20
X-7	1/2-FCV-30-52	9
	1/2-FCV-30-53	9
X-9A	1/2-FCV-30-7	24
	1/2-FCV-30-8	24
X-9B	1/2-FCV-30-9	9
	1/2-FCV-30-10	9
X-10A	1/2-FCV-30-14	24
	1/2-FCV-30-15	24
X-10B	1/2-FCV-30-16	9
	1/2-FCV-30-17	9
X-11	1/2-FCV-30-19	8
	1/2-FCV-30-20	8
X-80	1/2-FCV-30-37	31
	1/2-FCV-30-40	31

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ATTACHMENT 1

Proposed TS Changes (Mark-Ups) for WBN Unit 1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.	In accordance with the Inservice Testing Program or 92 days
SR 3.6.3.5	Perform leakage rate testing for containment purge valves with resilient seals.	In accordance with the Containment Leakage Rate Testing Program ~~184 days~~ ~~AND~~ ~~Within 92 days after opening the valve~~
SR 3.6.3.6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.7	Verify each 24 inch containment lower compartment purge supply and exhaust isolation valve is blocked to restrict the valve from opening > 50°.	18 months

(continued)

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ATTACHMENT 2

Proposed TS Changes (Mark-Ups) for WBN Unit 2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Perform leakage rate testing for containment purge valves with resilient seals.	In accordance with the Containment Leakage Rate Testing Program~~184 days~~ ~~AND~~ ~~Within 92 days after opening the valve~~
SR 3.6.3.6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.7	Verify each 24 inch containment lower compartment purge supply and exhaust isolation valve is blocked to restrict the valve from opening > 50°.	18 months
SR 3.6.3.8	Verify the combined leakage rate for all shield building bypass leakage paths is $\leq$ 0.25 L_a when pressurized to $\geq$ 15.0 psig.	In accordance with the Containment Leakage Rate Testing Program

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ATTACHMENT 3

Proposed TS Bases Page Changes (Mark-Ups) for WBN Unit 1 (For Information Only)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.

SR 3.6.3.5

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 4), is required to ensure OPERABILITY.

Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval. Therefore, these valves will be tested in accordance with Regulatory Guide 1.163, which allows a maximum test interval of 30 months ~~Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration"~~ (Ref. 3).

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.~~

SR 3.6.3.6

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative control. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.8 (continued)

The frequency is required by Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria. Although not a part of L_a, the Shield Building Bypass leakage path combined leakage rate is determined using the 10 CFR 50, Appendix J, Option B, Type B and C leakage rates for the applicable barriers.

REFERENCES

1. Watts Bar FSAR, Section 15.0, "Accident Analysis."

2. Watts Bar FSAR, Section 6.2.4.2, "Containment Isolation System Design," and Table 6.2.4-1, "Containment Penetrations and Barriers."

3. Regulatory Guide 1.163, “Performance-Based Containment Leak-Test Program, September 1995.”~~Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."~~

4. Title 10, Code of Federal Regulations, Part 50 Appendix J, Option B, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors - Performance - Based Requirements."

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ATTACHMENT 4

Proposed TS Bases Page Changes (Mark-Ups) for WBN Unit 2 (For Information Only)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 4), is required to ensure OPERABILITY.

Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval. Therefore, these valves will be tested in accordance with Regulatory Guide 1.163, which allows a maximum test interval of 30 months~~Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration"~~ (Ref. 3).

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92-day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.~~

SR 3.6.3.6

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative control. The 18-month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Operating experience has shown that these components usually pass this Surveillance when performed at the 18-month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

REFERENCES

1. Watts Bar FSAR, Section 15.0, “Accident Analysis.”

2. Watts Bar FSAR, Section 6.2.4.2, “Containment Isolation System Design,” and Table 6.2.4-1, “Containment Penetrations and Barriers.”

3. Regulatory Guide 1.163, “Performance-Based Containment Leak-Test Program, September 1995.~~Generic Issue B-20, “Containment Leakage Due to Seal Deterioration.”~~

4. Title 10, Code of Federal Regulations, Part 50 Appendix J, Option B, “Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors - Performance - Based Requirements.”

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ATTACHMENT 5

Proposed TS Changes (Final Typed) for WBN Unit 1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	Verify the isolation time of each power operated and each automatic containment isolation valve is within limits.	In accordance with the Inservice Testing Program or 92 days
SR 3.6.3.5	Perform leakage rate testing for containment purge valves with resilient seals.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.3.6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.7	Verify each 24 inch containment lower compartment purge supply and exhaust isolation valve is blocked to restrict the valve from opening > 50°.	18 months

(continued)

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ATTACHMENT 6

Proposed TS Changes (Final Typed) for WBN Unit 2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Perform leakage rate testing for containment purge valves with resilient seals.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.3.6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.7	Verify each 24 inch containment lower compartment purge supply and exhaust isolation valve is blocked to restrict the valve from opening > 50°.	18 months
SR 3.6.3.8	Verify the combined leakage rate for all shield building bypass leakage paths is $\leq 0.25\ L_a$ when pressurized to $\geq$ 15.0 psig.	In accordance with the Containment Leakage Rate Testing Program

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ATTACHMENT 7

Proposed TS Bases Changes (Final Typed) for WBN Unit 1 (For Information Only)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.4 (continued)

isolation time and Frequency of this SR are in accordance with the Inservice Testing Program or 92 days.

SR 3.6.3.5

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 4), is required to ensure OPERABILITY.

Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval. Therefore, these valves will be tested in accordance with Regulatory Guide 1.163, which allows a maximum test interval of 30 months (Ref. 3).

SR 3.6.3.6

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative control. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.8 (continued)

The frequency is required by Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria. Although not a part of L_a, the Shield Building Bypass leakage path combined leakage rate is determined using the 10 CFR 50, Appendix J, Option B, Type B and C leakage rates for the applicable barriers.

REFERENCES

1. Watts Bar FSAR, Section 15.0, "Accident Analysis."

2. Watts Bar FSAR, Section 6.2.4.2, "Containment Isolation System Design," and Table 6.2.4-1, "Containment Penetrations and Barriers."

3. Regulatory Guide 1.163, “Performance-Based Containment Leak-Test Program, September 1995.”

4. Title 10, Code of Federal Regulations, Part 50 Appendix J, Option B, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors - Performance - Based Requirements."

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ATTACHMENT 8

Proposed TS Bases Changes (Final Typed) for WBN Unit 2 (For Information Only)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B (Ref. 4), is required to ensure OPERABILITY.

Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval. Therefore, these valves will be tested in accordance with Regulatory Guide 1.163, which allows a maximum test interval of 30 months (Ref. 3).

SR 3.6.3.6

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative control. The 18-month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Operating experience has shown that these components usually pass this Surveillance when performed at the 18-month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

REFERENCES

1. Watts Bar FSAR, Section 15.0, “Accident Analysis.”

2. Watts Bar FSAR, Section 6.2.4.2, “Containment Isolation System Design,” and Table 6.2.4-1, “Containment Penetrations and Barriers.”

3. Regulatory Guide 1.163, “Performance-Based Containment Leak-Test Program, September 1995.

4. Title 10, Code of Federal Regulations, Part 50 Appendix J, Option B, “Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors - Performance - Based Requirements.”