

January 31, 2005

10 CFR 54

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Stop: OWFN P1-35  
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3  
LICENSE RENEWAL APPLICATION - ADDITIONAL INFORMATION  
CONCERNING THE INTEGRATION OF UNIT 1 RESTART AND LICENSE  
RENEWAL ACTIVITIES (TAC NOS. MC1704, MC1705, AND MC1706)**

By letter dated December 31, 2003, TVA submitted to the NRC an application pursuant to 10 CFR 54 to renew the operating licenses for the Browns Ferry Nuclear Plant, Units 1, 2, and 3. Based on recent discussions with the NRC Staff, TVA is providing the enclosed additional information to support NRC review and approval of the BFN license renewal application. Specifically, the enclosures expand on the information provided previously in Appendix F of the application, "Integration of Browns Ferry Unit 1 Restart and License Renewal Activities."

Enclosure 1 provides further background and information concerning BFN Unit 1 restart activities, and expands upon the regulatory basis for approval of the license renewal

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application in parallel with these restart activities. Enclosure 2 provides additional information concerning the thirteen BFN Unit 1 restart commitments that are discussed in Appendix F of the BFN license renewal application. Enclosure 2 also identifies the impact to the BFN license renewal regulatory basis should, for some unforeseen reason, any of these thirteen restart commitments be modified, withdrawn, or otherwise be unfulfilled upon the restart of BFN Unit 1. As detailed in the enclosures, TVA concludes that although it has not yet completed implementation of these Unit 1 restart commitments, the regulatory basis for NRC approval of the BFN license renewal application for Unit 1 has been established as previously acknowledged by the NRC staff.

TVA originally submitted the license renewal application assuming extended power uprate (EPU) conditions. As such, the application conservatively bounds the current licensed thermal power for each of the three units. By letter dated January 7, 2005, TVA agreed that the NRC would complete the license renewal application review based on the current licensed power level for each of the three units. The license renewal aspects of EPU will be addressed as part of the EPU review.

If you have any questions regarding this information, please contact me at (256) 729-2636.

Sincerely,

Original signed by:

T. E. Abney  
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Enclosure:

cc: See page 3

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Enclosure

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3  
LICENSE RENEWAL APPLICATION (LRA),

INTEGRATION OF UNIT 1 RESTART AND LICENSE RENEWAL  
ACTIVITIES

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(SEE ATTACHED)

## ENCLOSURE 1

### TENNESSEE VALLEY AUTHORITY BROWNS FERRY NUCLEAR PLANT (BFN) UNITS 1, 2, AND 3 LICENSE RENEWAL APPLICATION (LRA),

#### INTEGRATION OF UNIT 1 RESTART AND LICENSE RENEWAL ACTIVITIES

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By letter dated December 31, 2003, TVA submitted to the NRC an application pursuant to 10 CFR 54 to renew the operating licenses for the Browns Ferry Nuclear Plant, Units 1, 2, and 3. TVA is submitting additional information concerning the status of BFN Unit 1 restart activities and the impact of those activities on the license renewal application. The following discussion and the information in Enclosure 2 provides this additional information.

#### BACKGROUND

The three BFN units were designed and constructed by TVA and licensed in 1973, 1974, and 1976 respectively. All three BFN units are identical GE BWR/4 reactors with Mark I containments. The units operated from original licensing until 1985 when they were voluntarily shut down by TVA to address management and technical issues. TVA then implemented a comprehensive Nuclear Performance Plan to correct the deficiencies that led to the shutdown. This plan included changes in management, programs, processes, procedures, as well as extensive equipment refurbishment, replacement and modifications. Unit 2 was subsequently restarted in 1991 and Unit 3 followed in 1995. In the early 1990's, TVA decided to defer restart of BFN Unit 1.

On May 16, 2002, TVA announced the Unit 1 restart project. TVA had previously notified NRC of its intent to submit a license renewal application for Units 2 and 3 by December 31, 2003. TVA met with the NRC staff on July 24, 2002 to discuss its proposal to submit the license renewal application for all three units. Subsequent meetings were held with the staff on October 31, 2002 (Reference 1) April 23, 2003 (Reference 2), and September 29, 2003 (Reference 3) regarding the application. In those meetings, agreement was reached with the staff on the

content and format of the application to ensure that it met all regulatory requirements and supported staff review.

### **LICENSE RENEWAL APPLICATION CONTENT**

In the meetings referenced above, TVA explained that although it was engaging in numerous plant modifications and restart activities, the current licensing basis for Unit 1 was well-known, defined, and documented, and the license renewal application would be prepared based on the current licensing basis.

The unique element with Unit 1 is that restart activities include modifying its licensing basis to make it consistent with the current licensing bases of Units 2 and 3. During the meetings with the NRC Staff, it was agreed TVA would identify the Unit 1 differences in the license renewal application that will be eliminated when restart activities are completed. To show these differences, information not yet applicable to Unit 1 were highlighted with a bolded border box. This annotation methodology was consistent with previous multi-plant license renewal applications submitted to the NRC. Appendix F of the application described each of these differences, its effect on the application, the schedule for resolution, and provided references to application sections affected. This enabled TVA to submit the license renewal application based on the current licensing basis for all three units as well as identify Unit 1 restart activities relevant to the license renewal application.

As previously stated, the three BFN units are essentially identical, and the application is not unit-specific regarding aging management programs. The changes being implemented as part of Unit 1 restart activities are consistent with the changes made previously to Units 2 and 3. Aging management programs are common for all three units based on their current licensing basis. Since at restart, the Unit 1 licensing basis will be the same as BFN Units 2 and 3, the aging management programs specified will be applicable to all three units.

### **CURRENT LICENSING BASIS OF UNIT 1**

The current licensing basis for Unit 1 is known and understood. Unit 1 has been maintained in essentially the same physical configuration as it was when it was shutdown

in 1985 (except for systems required to keep Unit 1 in the shutdown condition or to support Unit 2/3 operation). Browns Ferry has one FSAR for all three units and the FSAR has been updated for all three units as required by 10 CFR 50.71. The Unit 1 Technical Specifications have been revised as needed. For example the Unit 1 Technical Specifications were converted to Improved Technical Specifications along with Units 2 and 3 in 1998. Likewise, TVA has responded to Generic Communications that were applicable to Unit 1, and has taken actions and/or committed to take actions as appropriate.

The current licensing basis is defined in 10 CFR 54.3 as follows:

*"Current licensing basis (CLB) is the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. **The CLB includes the NRC regulations** contained in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, 100 and appendices thereto; **orders; license conditions;** exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the **licensee's commitments remaining in effect that were made in docketed licensing correspondence** such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports."* **(Emphasis added)**

As shown above, for the purpose of license renewal, the definition of current licensing basis includes NRC regulations, license conditions, and commitments made in docketed licensing correspondence. The thirteen restart activities listed in Appendix F of the application are required to meet regulations, satisfy license conditions, or fulfill commitments. Accordingly, for the purpose of license renewal approval, all of these items are part of

the current licensing basis for Unit 1. It should be noted that in the license renewal application the restart activities listed in Appendix F were generally referred to as differences in the design basis or licensing basis. Based on the definition of current licensing basis in 10 CFR 54.3, these activities are more closely described as implementation activities of the design and licensing basis. Even though each of the thirteen activities listed in Appendix F is committed to and planned for completion prior to restart of Unit 1, any unimplemented commitments would remain valid, remain part of the current licensing basis, be carried over into the renewed license period, and controlled by the NRC regulatory and oversight process. Therefore, while implementation of the thirteen items identified in Appendix F is not yet complete, this should not be a barrier to NRC approval of the application for Unit 1. It has not been for commitments in prior license renewal applications approved by NRC to date.

#### **EFFECT OF APPENDIX F ACTIVITIES COMPLETION**

The license renewal application was structured to reflect the configuration and current licensing basis of all three units. Scoping and screening as well as aging management reviews were done based on the current licensing bases and configuration of all three unit. The differences between the units that are relevant to the application and will be resolved prior to Unit 1 restart, are listed in Appendix F. As each activity identified in Appendix F is completed, the corresponding highlighted (bolded bordered) text in the license renewal application will apply to Unit 1. The only change to the application will be to remove the bolded border. No changes are required to scoping and screening results, aging management review results, or TLAAs. In some cases, boundary drawings would change to reflect the bolded bordered text.

An example of this is the replacement of Unit 1 reactor attached piping susceptible to intergranular stress corrosion cracking (IGSCC) described in Appendix F, Section F.5 of the license renewal application. This piping was the subject of NRC Generic Letter 88-01 where licensees were requested to describe to the NRC their plans for mitigating the effects of IGSCC on the reactor attached piping. For Units 2 and 3, TVA elected to selectively replace some piping, apply weld overlays, and/or apply stress mitigation techniques to address the issue. For

Unit 1, TVA elected to replace all of the IGSCC susceptible piping (Reactor Recirculation, Core Spray, Residual Heat Removal, and Reactor Water Cleanup) in the drywell with IGSCC resistant material. Even though this is a change in material, the aging management programs specified in GALL are the same. Thus, for Unit 1 piping, the specified aging management program in the license renewal application is the same as the removed piping, as well as the new piping. Thus when the pipe is replaced, there will be no affect on the license renewal application other than the related bolded border text in the application will then apply to Unit 1.

Another example is Appendix F, Section F.1, Main Steam Isolation Valve Alternate Leakage Treatment. This restart activity involves a Technical Specification change to increase the allowable MSIV leakage for Unit 1 to be consistent with Units 2 and 3. This Technical Specification change takes credit for an alternate leakage treatment pathway utilizing the existing Main Steam System piping to the Main Condenser. For Units 2 and 3, this piping is in scope for license renewal. As such, the boundary drawings show this piping as in scope for Units 2 and 3 but not in scope for Unit 1. The application shows the appropriate aging management program for this piping (same piping on each of the three units). When the Technical Specification change is approved for Unit 1, the specified aging management program will apply, and the related bolded border text in the application will then apply to Unit 1.

A more detailed description of each of the thirteen items in Appendix F is included as Enclosure 2 to this letter. Enclosure 2 also explains the regulatory basis of these items as related to the current licensing basis. All of the items are required to satisfy an obligation (regulation or license condition) or fulfill commitments.

#### **EFFECT IF APPENDIX F COMMITMENTS ARE NOT IMPLEMENTED**

As previously discussed, all thirteen activities identified in Appendix F of the license renewal application are required to meet regulations, satisfy license conditions, or fulfill commitments prior to restart of Unit 1. Therefore, these activities are considered part of the Unit 1 current licensing basis for the purpose of license renewal. While TVA has no intention of not completing any

of these activities, the regulatory effect of not completing them is described below per the staff's request:

### Activities to Satisfy Regulations

TVA is required to be in compliance with the applicable regulations. Further, TVA has committed to obtain NRC approval for Unit 1 restart, and NRC has documented its plans to inspect Unit 1 in Manual Chapter 2509. Based on this, Unit 1 restart will not occur until TVA is in compliance. If a regulation is not to be met, TVA would be required to request an exemption under 10 CFR 50.12. While this is certainly not expected to be required, TVA would have to address the effects of the exemption on the renewed license in any such request.

### Commitments

TVA's commitment management program is consistent with NEI 99-04, "Guidelines for Managing NRC Commitment Changes". If a committed action were not going to be completed, it would be evaluated under TVA's commitment management program. Commitments that have not been implemented, but were relied upon by NRC require prior notification of NRC via docketed correspondence.

In either case, NRC would be notified under the existing regulatory processes of the change before it was implemented. Although TVA is obligated or committed to complete all of these items prior to restart of BFN Unit 1, Enclosure 2 of this letter identifies the impact to the BFN license renewal regulatory basis should, for some unforeseen reason, any of these thirteen restart commitments be modified, withdrawn, or otherwise be unfulfilled upon the restart of BFN Unit 1.

### SUMMARY

In summary, the current licensing basis for Unit 1 is known and is accurately reflected in the license renewal application, consistent with the regulations. Appendix F of the application describes each of the differences between Unit 1 and Units 2 and 3, and provides the Unit 1 restart activity that will resolve this difference. The

resolution of each difference is a regulatory commitment or is required by a regulation and as such is part of the current licensing basis for Unit 1. Furthermore, the application describes the aging management programs for Unit 1 in its configuration at the time of the application as well as at restart. This should not affect the staff's ability to review and approve the application. Therefore, as previously agreed, the NRC staff is able to review and approve the BFN license renewal application in accordance with NRC regulations.

#### **REFERENCES**

1. NRC Meeting Summary, S.T. Hoffman, "Summary Of Meeting to Discuss Planned License Renewal Application," dated November 25, 2002.
2. NRC Meeting Summary, S.T. Hoffman, Summary Of Meeting To Discuss Planned License Renewal Application, June 2, 2003.
3. NRC Meeting Summary, S.T. Hoffman, "Summary Of Meeting to Discuss Browns Ferry Units 1, 2, and 3 Planned License Renewal Application," dated October 30, 2003.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3  
LICENSE RENEWAL APPLICATION (LRA),  
STATUS OF UNIT 1 RESTART ACTIVITIES

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(SEE ATTACHED)

## ENCLOSURE 2

**TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3  
LICENSE RENEWAL APPLICATION (LRA) ,  
STATUS OF UNIT 1 RESTART ACTIVITIES**

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### **BACKGROUND**

To facilitate NRC review, as discussed in Section 2.1.1 of the license renewal application, BFN identified differences between the current licensing basis and its implementation for Unit 1 and the current licensing basis for Units 2 and 3 for systems and components within the scope of the license renewal. These differences were presented in Appendix F of the application. As part of the application, TVA formally committed to implement the modifications, programs or inspections necessary to resolve the licensing basis differences described in Appendix F of the BFN license renewal application prior to Unit 1 restart.

TVA fully intends to keep the licensing basis for the three units the same throughout the life of the plant. However, the need to implement major modifications during outages may keep the implementation of the licensing basis from being identical at any single point in time.

For the Unit 1 restart activities listed in Appendix F, presented below is a discussion of each issue, references to key correspondence and previous commitments, and a description of the impact to the BFN license renewal regulatory basis should, for some unforeseen reason, any of these thirteen restart commitments be modified, withdrawn, or otherwise be unfulfilled upon the restart of BFN Unit 1.

**EVALUATION OF UNIT 1 RESTART ACTIVITIES**  
**LISTED IN APPENDIX F**

**F.1 MAIN STEAM ISOLATION VALVE ALTERNATE LEAKAGE TREATMENT**

Discussion:

The Unit 1 current licensing basis for Main Steam Isolation Valve leakage does not incorporate an Alternate Leakage Treatment Pathway utilizing Main Steam System piping and the main condenser. By letter dated July 9, 2004 (Reference 1), TVA submitted to the NRC proposed BFN Unit 1 Technical Specifications Change TS-436. TS-436 requests an increase in the allowable leakage rate criteria for the MSIVs, and an exemption to specific portions of 10 CFR 50, Appendix J, to allow the exclusion of MSIV leakage from the summation of containment leak rate test results.

The MSIV leakage pathway will utilize the main steam drain lines to preferentially direct any MSIV leakage to the main condenser. This drain path takes advantage of the large volume of the steam lines and condenser to provide holdup and plate-out of fission products that may leak through the closed MSIVs. TS-436 credits the Unit 1 main steam piping from the outermost isolation valve up to the turbine stop valve, the bypass/drain piping to the main condenser and the main condenser. This pathway has been analyzed for seismic ruggedness. The results of the analysis were submitted in support of Unit 1 License Amendment 251 (Reference 2). Appendix F identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by approval of the proposed Technical Specification change provided by Reference 2 and implementation of the actions committed in the proposed change. Prior to restart of Unit 1, TVA committed to revise plant operating procedures to provide procedural requirements for the establishment of the Alternate Leakage Treatment path to the condenser and resolve the outliers identified in the supporting analysis.

Once the modifications are completed, the physical and operational differences between Unit 1 and Units 2 and 3 will be resolved.

Previous Commitments:

On July 9, 2004 (Reference 2), as part of the proposed Technical Specification change to increase the allowable leakage rate criteria for the Main Steam Isolation Valves, TVA made the following commitments:

1. Prior to Unit 1 restart, plant operating procedures will be revised to provide procedural requirements for the establishment of the Alternate Leakage Treatment path to the condenser.
2. The Unit 1 outliers will be resolved prior to Unit 1 restart. This includes qualification of 1-PCV-1-147 and the addition of in-line check valves (1-CKV-1-742 and 1 CKV-1-744) for the Offgas Preheaters.

Effect on License Renewal if Not Implemented:

Should TVA not receive approval of TS-436, the effect on the BFN license renewal is that the Unit 1 components credited in the Main Steam Isolation Valve Alternate Leakage Pathway would not be in scope for license renewal as currently planned. The Unit 1 boundary drawings would remain accurate and the increased scope identified by the bold border boxes in the application would not be applicable. Staff reviews of the application would not change.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: August, 2006

Summary:

In summary, after the approval of the proposed Technical Specification change provided by Reference 2 and implementation of the actions committed in the proposed change prior to Unit 1 restart, there will be no functional differences in the Alternate Leakage Treatment pathways between Units 1, 2 and 3. The Unit 1 components that comprise the Alternate Leakage Treatment pathway will be

incorporated into the appropriate aging management programs specified in the license renewal application and there will be no unit specific differences.

References:

1. TVA letter to NRC, "Browns Ferry Nuclear Plant (BFN) Unit 1 - Technical Specification (TS) 436 - Increased Main Steam Isolation Valve (MSIV) Leakage Rate Limits and Exemption from 10 CFR 50, Appendix J," dated July 9, 2004
2. NRC letter to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Issuance of Amendments Regarding Full-Scope Implementation of Alternative Source Term," dated September 27, 2004

## **F.2 CONTAINMENT ATMOSPHERE DILUTION SYSTEM MODIFICATIONS**

### Discussion:

The Automatic Depressurization System (ADS) system at BFN consists of six (6) pneumatic valves per unit, each with its own accumulator and check valve. The ADS system was originally designated for short-term use after design basis events, and long-term use (up to 100 days) was not considered in the original design.

A request to consider the long term use of the ADS system was included in NUREG 0737 (TMI Action Plan), Item II.K.3.28 (Qualification of ADS Accumulators). The Safety Evaluation that documents the acceptability of TVA's plan to satisfy Item II.K.3.28 for all three Browns Ferry units was provided in Reference 1. Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

The differences between Unit 1 and Units 2 and 3 will be resolved prior to restart of Unit 1 by the implementation of the modifications on Unit 1 to upgrade the ADS accumulator system to implement its current licensing basis. As committed in Reference 2, the capability to supply pressurized nitrogen to operate the main steam relief valves for the long-term when control air is not available will be provided by splitting the ring header into two sections, and providing an alternate nitrogen supply to the Drywell Control Air System.

### Previous Commitments:

On July 12, 1984 (Reference 2), as part of TVA's response to TMI Item II.K.3.28, Qualification of ADS Accumulators, TVA committed to make the following modifications:

1. Separating the drywell control air system into two separate trains and,
2. Supplying each train with pressurized nitrogen from one of the separate Containment Air Dilution (CAD) system supply lines which are designed for containment purge/pressurization to control post LOCA hydrogen.

Effect on License Renewal if Not Implemented:

Should TVA not make the modifications discussed above, these associated additional components planned to be installed would not be installed, and therefore, the additional components would not be in scope for license renewal as currently planned. The Unit 1 boundary drawings would remain accurate and the increased scope identified by the bold border boxes in the application would not be applicable. Staff reviews of the application would not change.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: July, 2006

Summary:

In summary, once the Unit 1 modifications are completed prior to restart, there will be no functional differences in the Containment Atmosphere Dilution nitrogen supply between Units 1, 2 and 3. The Unit 1 components that comprise the Containment Atmosphere Dilution nitrogen supply will be incorporated into the appropriate aging management programs specified in the license renewal application and there will be no unit specific differences.

References:

1. NRC letter to TVA, "NUREG 0737, Item II.K.3.28, Qualification of ADS Accumulators," dated July 24, 1985.
2. TVA letter to NRC, in regards to NUREG 0737, Item II.K.3.28, "Qualification of ADS Accumulators," dated July 12, 1984.

### F.3 FIRE PROTECTION

#### Discussion:

TVA is required by 10 CFR 50 Appendix R to have the capability to maintain safe shutdown during and after fires. NRC issued its Safety Evaluation Report (SER) for the BFN Appendix R Safe Shutdown Analysis in Reference 1, and a Supplemental Safety Evaluation in Reference 2. The NRC issued an associated license amendment in Reference 3. The SER for the BFN Fire Protection Plan and Fire Hazards Analysis was provided in Reference 4. Appendix F identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

The differences between the current fire protection licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by implementation of the Fire Protection Program on Unit 1. The NRC staff issued a license amendment for the 10 CFR 50 Appendix R post-fire safe shutdown program in Reference 5.

#### Previous Commitments:

Unit 1 License Condition 2.C.13 states:

"Browns Ferry Nuclear Plant shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for BFN as approved in the SEs dated December 8, 1988, March 6, 1991, March 31, 1993, November 2, 1995, and Supplement dated November 3, 1989 subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire."

#### Effect on License Renewal if Not Implemented:

It is not reasonable to presume that the fire protection program will not be implemented prior to restart of BFN Unit 1.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: August, 2006

Summary:

In summary, once the Unit 1 Fire Protection Program modifications are completed prior to restart, there will be no functional differences between Units 1, 2 and 3. The Unit 1 components that comprise the High Pressure Fire Protection system will be incorporated into the appropriate aging management programs specified in the license renewal application and there will be no unit specific differences.

References:

1. NRC letter to TVA, "Browns Ferry Nuclear Plant, Units 1, 2 and 3 - Appendix R Safe Shutdown System Analysis" dated December 8, 1988.
2. NRC letter to TVA, "Supplemental Safety Evaluation on Post-Fire Safe Shutdown Systems and Final Review of the National Fire Protection Association Code Deviations - Browns Ferry Nuclear Plant, Unit 2," dated November 3, 1989.
3. NRC letter to TVA, "Issuance of Amendment," dated March 6, 1991.
4. NRC letter to TVA, "Fire Protection Program - Browns Ferry Nuclear Plant Units 1, 2 and 3," dated March 31, 1993.
5. NRC letter to TVA, "Safety Evaluation of Post-Fire Safe Shutdown Capability and Issuance of Technical Specification Amendments for the Browns Ferry Nuclear Plant Units 1, 2, and 3," dated November 2, 1995.

#### **F.4 ENVIRONMENTAL QUALIFICATION**

##### Discussion:

As part of the recovery program for Browns Ferry (Reference 1), TVA committed to implement its Environmental Qualification program so that electrical equipment located in a harsh environment would meet 10 CFR 50.49 requirements prior to the restart of each unit.

The Safety Evaluation for the program was issued by NRC in Reference 2. The site-wide Environmental Qualification Program required by 10 CFR 50.49 has been developed for BFN, has been implemented on Units 2 and 3, and is being implemented on Unit 1. This program defines responsibilities and specifies requirements to establish and maintain auditable documentation demonstrating the qualification of equipment. This program is described in Section 4.4 of the license renewal application. In summary, the program:

- Identifies the applicable Design Basis Accidents and determines the environmental parameters for those accidents. This results in the environmental parameters, which are necessary for procurement, design and qualification of equipment in accordance with 10 CFR 50.49.
- The program identifies the equipment and cables in the harsh zones within the scope of 10 CFR 50.49 and determines their required operating times.
- Environmental qualification is established or procured and documented for each piece of equipment listed in the 10 CFR 50.49 List. Environmental Qualification Data Packages provide documented evidence which demonstrates the qualification of each piece of equipment for its specific application and environment. Components subject to 10 CFR 50.49 requirements, that are not qualified for the license term, must be refurbished, replaced, or have their qualification extended prior to reaching the aging limits established in their evaluation.
- Actions are identified, proceduralized and initiated to maintain the qualification of installed equipment and cable. This includes periodic, preventative, or

corrective maintenance, procurement controls and storage requirements.

The Safety Evaluation for the program was issued by NRC in Reference 2.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart by implementation of the Environmental Qualification program (license renewal application Sections 4.4 and B.3.1) on Unit 1. Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

Previous Commitments:

On October 24, 1988, as part of the recovery program for Browns Ferry (Reference 1), TVA committed to implement its Environmental Qualification program so that electrical equipment located in a harsh environment would meet 10 CFR 50.49 requirements prior to the restart of each unit.

Effect on License Renewal if Not Implemented:

It is not reasonable to presume that the Environmental Qualification program will not be implemented prior to restart of BFN Unit 1.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: July, 2006

Summary:

In summary, the differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by implementation of the Environmental Qualification program. Once the Unit 1 portion of the Environmental Qualification program is completed, the BFN site-wide Environmental Qualification program will ensure that the components subject to 10 CFR 50.49 requirements are maintained within the bounds of their qualification bases for the period of extended operation.

References:

1. TVA letter, S. A. White to NRC, "Browns Ferry Nuclear Plan (BFN) Nuclear Performance Plan, Revision 2," dated October 24, 1988.
2. NRC letter to TVA, "NUREG 1232, Volume 3, Supplement 2 Browns Ferry, Unit 2," dated January 23, 1991.

## F.5 INTERGRANULAR STAINLESS STEEL STRESS CORROSION CRACKING

### Discussion:

As discussed in Section F.5 of the license renewal application, the BWR Stress Corrosion Cracking Program manages intergranular stress corrosion cracking in reactor coolant pressure boundary components made of stainless steel.

TVA's program to address Generic Letter (GL) 88-01, NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping, for Unit 3 was provided by Reference 1. TVA had previously committed to submit a report containing the details of the repair or replacement work (Reference 2). The Safety Evaluation documenting the acceptability of the program was included in Reference 3. Supplemental information regarding Unit 1 was submitted in Reference 4. As discussed in Reference 4, the following wrought austenitic stainless steel piping systems and components on BFN Unit 1 are considered susceptible to IGSCC according to the guidelines given in GL 88-01:

- Reactor Recirculation from the recirculation inlet and outlet nozzles to the connections with residual heat removal;
- Residual Heat Removal from the recirculation system to the first isolation valve outside of the drywell penetration;
- Reactor Water Cleanup (RWCU) from its connection to the RHR system to first isolation valve outside of the drywell penetration;
- Core Spray from the core spray inlet nozzles to the drywell penetration, including the core spray inlet safe ends; and
- Jet pump instrument safe ends.

As stated in Reference 4, the IGSCC susceptible piping on Unit 1 is being replaced using materials which are resistant to IGSCC. To address the requirements for inspection schedules and expansion plans, the BFN

susceptible weldments have been categorized according to NUREG 0313, Revision 2, Section 5, Table 1. The In-Service Inspections are required by BFN Technical Requirement Manual Section 3.4.3.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by the replacement of the IGSCC susceptible piping, and by providing IGSCC protection or mitigation. Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

Previous Commitments:

On July 21, 2004 (Reference 4), TVA stated that it would replace the IGSCC susceptible piping prior to Unit 1 restart. TVA had previously committed to submit a report containing the details of the repair or replacement work (Reference 2)

Effect on License Renewal if Not Implemented:

It is not reasonable to presume that replacement of the IGSCC susceptible piping will not be performed. TVA has already removed the original piping and must replace it to operate the unit.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: March, 2006

Summary:

In summary, once the piping replacement modifications are completed on Unit 1 prior to restart, there will be no functional differences in the IGSCC mitigation or protection between Units 1, 2 and 3. The Unit 1 components that mitigate IGSCC will be incorporated into the appropriate aging management programs and there will be no unit specific differences.

References:

1. TVA letter to NRC, "Browns Ferry Nuclear Plant - Unit 3 - Supplemental Response to Generic Letter (GL) 88-01, NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping," dated December 28, 1992.
2. TVA letter to NRC, "Browns Ferry Nuclear Plant (BFN) - Response to Bulletin 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping, dated January 25, 1988," dated August 1, 1988.
3. NRC letter to TVA, "Browns Ferry Nuclear Plant Unit 3 - Safety Evaluation of Supplemental Response to Generic Letter 88-01," dated December 3, 1993.
4. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) Unit 1 - Supplemental Response to Generic Letter 88-01, NRC Position on Intergranular Stress Corrosion Cracking in BWR Austenitic Stainless Steel Piping," dated July 21, 2004.

**F.6 BOILING WATER REACTOR VESSEL AND INTERNALS PROJECT  
INSPECTION AND FLAW EVALUATION GUIDELINES  
IMPLEMENTATION**

Discussion:

During Unit 1's extended outage, the Boiling Water Reactor Vessel Internals Project (BWRVIP) (Application Section 3.1.2.2.16 and B.2.1.12) was initiated to develop inspection and flaw evaluation guidelines. The following guidelines will be implemented on Unit 1 during its restart:

- BWRVIP-03: Reactor Pressure Vessel and Internals Examination Guidelines
- BWRVIP-05: BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations
- BWRVIP-06-A: Safety Assessment of BWR Reactor Internals
- BWRVIP-15: Configurations of Safety-Related BWR Reactor Internals
- BWRVIP-18: BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines
- BWRVIP-25: BWR Core Plate Inspection and Flaw Evaluation Guidelines
- BWRVIP-26: BWR Top Guide Inspection and Flaw Evaluation Guidelines
- BWRVIP-27-A: BWR Standby Liquid Control System/Core Plate Inspection and Flaw Evaluation Guidelines
- BWRVIP-38: BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines
- BWRVIP-41: BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines
- BWRVIP-47: BWR Lower Plenum Inspection and Flaw Evaluation Guidelines
- BWRVIP-48: Vessel ID Attachment Weld Inspection and Flaw Evaluation

- BWRVIP-49-A: Instrument Penetration Inspection and Flaw Evaluation Guidelines
- BWRVIP-74-A: BWR Reactor Pressure Vessel Inspection and Flaw Evaluation Guidelines
- BWRVIP-75: Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules
- BWRVIP-76: BWR Core Shroud Inspection and Flaw Evaluation Guidelines
- BWRVIP-94: Program Implementation Guide
- BWRVIP-104: Evaluation and Recommendations to Address Shroud Support Cracking in BWRs

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 with regards to the reactor vessel and internal inspection criteria will be resolved prior to restart of Unit 1 by the implementation of the BWRVIP guidelines on Unit 1. Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

Previous Commitments:

By letter dated April 25, 1997 (Reference 1), TVA committed, along with the other participating utilities, to actively participate in completing the BWRVIP program.

On December 31, 2003, as part of the submittal of the License Renewal application (Reference 2), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

Effect on License Renewal if Not Implemented:

It is not reasonable to presume that TVA will not implement the BWRVIP guidelines. Absent continued commitment to the BWRVIP, TVA would have to independently develop and obtain NRC approval of alternate methodologies for BFN Unit 1 which is not economically feasible.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: November, 2005

Summary

In summary, prior to restart of Unit 1, the BWRVIP information included in the application will be implemented on Unit 1.

References:

1. BWRVIP letter, C. Terry to B. Sheron (NRC), "BWR Utility Commitments to the BWRVIP," dated April 25, 1997.
2. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.

## **F.7 ANTICIPATED TRANSIENTS WITHOUT SCRAM**

### Discussion:

10 CFR 50.62 requires licensees to reduce the risk from anticipated transients without scram (ATWS) events. In Reference 1, TVA adopted the BWR Owners' Group recommendation for implementation of the ATWS rule. The NRC approved TVA's approach for satisfying 10 CFR 50.62 in Reference 2. The associated Technical Specification changes were approved in Reference 3. Technical Specification 3.3.4.2 for the BFN units provides the requirements for the Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation. Technical Specification 3.1.7, Standby Liquid Control (SLC) System, for the BFN units provides requirements for ATWS that satisfy 10 CFR 50.62. In Reference 4, TVA confirmed its commitment to install the required ATWS modifications prior to Unit 1 restart.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by implementation of the ATWS modifications on Unit 1. The Control Rod Drive System will have a diverse scram (Alternate Rod Injection) (Application Section 2.3.3.29). Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

### Previous Commitments:

On November 29, 1990 (Reference 4), TVA confirmed its commitment to install the required ATWS modifications prior to Unit 1 restart.

### Effect on License Renewal if Not Implemented:

If for any reason, TVA changes its planned actions to address 10 CFR 50.62, it would need to submit a revised Technical Specifications change for NRC approval, and address the aging management aspects of the changes as necessary.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: May, 2006

Summary:

In summary, after the implementation of the ATWS modifications on Unit 1 prior to restart, there will be no functional differences in the ATWS system between Units 1, 2 and 3. The Unit 1 components that perform the ATWS function will be incorporated into the appropriate aging management programs specified in the license renewal application and there will be no unit specific differences.

References:

1. TVA letter, R. Gridley to NRC, "Browns Ferry Nuclear Plant (BFN) - Anticipated Transients Without Scram (ATWS) Rule (10 CFR 50.62) - Plant Specific Design," dated March 1, 1988.
2. NRC letter to TVA, "Compliance with Rule 10 CFR 50.62 Relating to Alternate Rod Injection and Reactor Pump Trip Systems," dated January 22, 1989.
3. NRC letter to TVA, "Technical Specifications on Anticipated Transients Without Scram (ATWS) - Recirculation Pump Trip (RPT), Browns Ferry Nuclear Plants, Units 1, 2, and 3," dated January 26, 1989.
4. TVA letter, E. G. Wallace to NRC, "Browns Ferry Nuclear Plant (BFN) - Anticipated Transient Without Scram (ATWS) Response to NRC Followup Items Received During ATWS Inspection, dated November 29, 1990.

## F.8 REACTOR VESSEL HEAD SPRAY

### Discussion:

The reactor vessel head spray piping is piping that is susceptible to IGSCC and was included in GL 88-01. TVA responded to GL 88-01 for all three BFN units on August 1, 1988 (Reference 1). In that letter, TVA notified NRC that it had previously removed the head spray piping from Units 2 and 3, and that the head spray piping would be removed for Unit 1 prior to startup. NRC's approval was documented in Reference 2. TVA reconfirmed in its July 21, 2004 supplemental response to Generic Letter 88-01 for Unit 1 (Reference 3) that it planned to remove the reactor vessel head spray piping prior to restart of Unit 1.

On Units 2 and 3, the reactor vessel head spray piping within the drywell has been removed and the reactor vessel head penetration has a flanged cap installed. The primary containment isolation valves have been removed and the primary containment penetration has been sealed. Head spray piping has also been removed and a permanent welded cap has been installed at the Residual Heat Removal System interface with its head spray header. The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by performing these head spray modifications on Unit 1.

Once the head spray modifications are completed on Unit 1 prior to restart, the physical and operational differences between Unit 1 and Units 2 and 3 will be resolved. Appendix F of the license renewal application identifies the Systems/ Structures/Components impacted by this activity, and references the license renewal application sections affected.

### Previous Commitments:

On December 31, 2003, as part of the submittal of the License Renewal application (Reference 4), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

Effect on License Renewal if Not Implemented:

It is not reasonable to presume that the reactor head spray piping will not be removed as described. The piping is being removed and the associated modifications are in progress.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: June, 2006

Summary:

In summary, after the implementation of the modifications to the Unit 1 reactor vessel head piping are completed prior to restart, there will be no functional differences in the associated primary containment configurations for Units 1, 2 and 3.

References:

1. TVA letter to NRC, "Browns Ferry Nuclear Plant (BFN) - Response to Bulletin (sic) 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping, dated January 25, 1988," dated August 1, 1988.
2. NRC letter to TVA, "Browns Ferry Nuclear Plant Unit 3 - Safety Evaluation of Supplemental Response to Generic Letter 88-01," dated December 3, 1993.
3. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) Unit 1 - Supplemental Response to Generic Letter 88-01, NRC Position on Intergranular Stress Corrosion Cracking in BWR Austenitic Stainless Steel Piping," dated July 21, 2004.
4. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.

## F.9 HARDENED WETWELL VENT

### Discussion:

In Generic Letter 89-16 (Reference 1), the NRC requested licensees with Mark I containments to voluntarily install a hardened wetwell vent. In response, TVA committed to install a hardened vent prior to restart of each unit (Reference 2). The hardened wetwell vent has been installed on Units 2 and 3, but has not yet been implemented on Unit 1.

The differences between the implementation of the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by the installation of the hardened wetwell vent on Unit 1.

Once the modifications are completed, the physical and operational differences between Unit 1 and Units 2 and 3 will be resolved. Appendix F of the license renewal application identifies the Systems/ Structures/Components impacted by this activity, and references the license renewal application sections affected.

### Previous Commitments:

On October 30, 1989 (Reference 2), TVA committed to install a hardened vent prior to restart of Unit 1.

### Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: May, 2006

### Effect on License Renewal if Not Implemented:

If for any reason, TVA decided it would implement an alternate solution to Generic Letter 89-19, TVA would be required to notify the NRC, and include any alternate modifications within the appropriate aging management programs.

Summary:

In summary, after the implementation of the Unit 1 hardened wetwell vent modifications are completed prior to restart, there will be no functional differences in the associated systems for Units 1, 2 and 3. The Unit 1 components that comprise the hardened wetwell vent will be incorporated into the appropriate aging management programs specified in the license renewal application and there will be no unit specific differences.

References:

1. NRC letter to All Operating Licensees with Mark I Containments, "Installation of a Hardened Wetwell Vent (Generic Letter 89-16)," dated September 1, 1989.
2. TVA letter, M. J. Ray to NRC, "Response to Generic Letter 89-16, Installation of Hardened Wetwell Vent," dated October 30, 1989.

## **F.10 SERVICE AIR AND DEMINERALIZED WATER PRIMARY CONTAINMENT PENETRATIONS**

### Discussion:

In May 1992, NRC requested information regarding Unit 1 compliance with NUREG-0737, Item II.E.4.2 and 10 CFR 50, Appendix J (Reference 1). NRC compared the Unit 1 containment isolation scheme to the Unit 2 design and concluded, in the January 1995 Safety Evaluation (Reference 2), that the isolation design was acceptable.

Currently, primary containment penetrations X-20 and X-21 have a different configuration on Unit 1 than on Units 2 and 3. On Unit 1 the penetrations are piped to the Service Air and Demineralized Water Systems with primary containment isolation valves. On Units 2 and 3, they are capped and not assigned to a service system. These penetrations on Unit 1 will be capped and made identical to Units 2 and 3. Appendix F of the license renewal application identifies the Systems/ Structures/Components impacted by this activity, and references the license renewal application sections affected.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by making the Unit 1 configuration the same as the current Units 2 and 3 configuration. Once the Service Air and Demineralized Water Systems modifications are completed on Unit 1 prior to restart, the physical and operational differences between Unit 1 and Units 2 and 3 will be resolved.

### Previous Commitments:

On December 31, 2003, as part of the submittal of the License Renewal application (Reference 3), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

### Effect on License Renewal if Not Implemented:

If for any reason, TVA decided it would not implement the committed modifications, TVA would be required to notify the NRC. The Unit 1 associated piping and components that are to be removed are shown on the Unit 1 Boundary drawings and. If the piping were not removed, the aging management

programs specified in the license renewal application will apply. Thus, there will be no change in the application if the committed modifications were not completed.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: May, 2006

Summary:

In summary, after the implementation of the modifications to the Unit 1 Service Air and Condensate and Demineralized Systems piping are completed prior to restart, there will be no functional differences in the associated primary containment configurations for Units 1, 2 and 3.

References:

1. NRC letter to TVA, "Request for Additional Information to Review Compliance with NUREG 0737, Item II.E.4.2 and 10 CFR 50, Appendix J, dated May 5, 1992.
2. NRC letter to TVA, "Browns Ferry Nuclear Plant Units 1 and 3, NUREG-0737, Item II.E.4.2, Containment Isolation Dependability," dated January 6, 1995.
3. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.

## F.11 AUXILIARY DECAY HEAT REMOVAL SYSTEM

### Discussion:

The Auxiliary Decay Heat Removal System provides a non-safety related means to remove decay heat and residual heat from the spent fuel pool and reactor cavity, and currently serves only BFN Units 2 and 3. The ADHR allows servicing of the Residual Heat Removal System (RHRS) components earlier in an outage, thus, potentially reducing the outage duration.

The only intended function for license renewal is to provide secondary containment integrity for the ADHR System's piping that transfers the fuel pool heat to the heat sink outside containment. There is currently only a single piping loop serving both Unit 2 and Unit 3 that penetrates the secondary containment.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by modifying the ADHR System to service Unit 1 as well as Unit 2 and Unit 3. When modified, there will continue to be only a single piping loop that penetrates the secondary containment. That loop and its secondary containment penetrations will serve all three units. Once the ADHR modifications are completed on Unit 1 prior to restart, the physical and operational differences between Unit 1 and Units 2 and 3 will be resolved. Appendix F of the license renewal application identifies the Systems/Structures/Components impacted by this activity, and references the license renewal application sections affected.

### Previous Commitments:

On December 31, 2003, as part of the submittal of the License Renewal application (Reference 1), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

### Effect on License Renewal if Not Implemented:

Should TVA not make the modifications discussed above, TVA would be required to notify NRC. Since these associated additional components planned to be installed would not be

installed, the boundary drawings for Unit 1 would not change, and the additional components would not be included within the appropriate aging management programs as currently planned:

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: May, 2005

Summary:

In summary, after the implementation of the modifications to the ADHR System are completed prior to Unit 1 restart, there will be no functional differences in the system for Units 1, 2 and 3.

References:

1. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.

## F.12 MAINTENANCE RULE

### Discussion:

By Reference 1, NRC issued a partial temporary exemption from the requirements of the Maintenance Rule, 10 CFR 50.65. The action exempts TVA from the specific scoping requirements of 10 CFR 50.65(b), and allows TVA to maintain the defueled and long-term lay-up status of Unit 1.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved upon the restart of Unit 1, when the temporary exemption ceases to be effective. Specifically, with respect to the current licensing basis differences identified in the application, the differences in the Maintenance Rule implementation will be resolved.

### Previous Commitments:

On December 31, 2003, as part of the submittal of the license renewal application (Reference 2), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

### Effect on License Renewal if Not Implemented:

It is not reasonable to presume that TVA will not complete implementation of the Maintenance Rule for Unit 1 prior to restart. Complete implementation of the rule is required by 10 CFR 50.65 which would require that TVA submit and receive approval of an exemption to that regulation.

### Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: Unit 1 Restart

### Summary

In summary, prior to restart, TVA will have fully implemented the Maintenance Rule for Unit 1, and the affected information in the application will also apply to Unit 1.

References:

1. NRC letter to TVA, "Issuance of Temporary Partial Exemption from 10 CFR 50.65, Browns Ferry Nuclear Plant, Unit 1," dated August 9, 1999.
2. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.

### **F.13 REACTOR WATER CLEANUP (RWCU) SYSTEM**

#### Discussion:

BFN has selected an option in the RWCU System Program that allows no testing on system piping outboard of the outboard primary containment isolation valve provided that the following actions are completed:

- The RWCU piping outside the outboard primary containment isolation valves will be replaced with Intergranular Stress Corrosion Cracking (IGSCC) resistant piping;
- The actions requested in NRC Generic Letter 89-10, Safety-Related Motor-Operated Valve Testing and Surveillance, will be satisfactorily completed for the RWCU system; and

In addition, the RWCU system will be reconfigured so that the pumps are no longer exposed to a high temperature environment, consistent with Units 2 and 3.

The differences between the current licensing basis for Unit 1 and the current licensing bases for Units 2 and 3 will be resolved prior to restart of Unit 1 by performing the actions described above. Once implemented, there will be no operational differences between the Unit 1 RWCU system and the Units 2 and 3 systems. Appendix F identifies the Systems/ Structures/Components impacted by this activity, and references the license renewal application sections affected.

#### Previous Commitments:

On December 31, 2003, as part of the submittal of the license renewal application (Reference 1), TVA committed to resolve the Unit 1 licensing basis differences described in Appendix F of the application prior to Unit 1 restart.

#### Effect on License Renewal if Not Implemented:

It is not feasible to presume that TVA will not have completed the above commitments prior to restart since the piping has been removed and the system is being reconfigured as described above.

Status:

Committed Completion Date: Unit 1 Restart  
Current Forecast Completion Date: July, 2006

Summary:

In summary, prior to the restart of Unit 1, TVA will have completed replacement of Reactor Water Cleanup System piping outside the outboard primary containment isolation valves, and completed implementation of its Generic Letter 89-10 program, such that the Unit 1 differences identified in the application in this regard are no longer applicable.

References:

1. TVA letter, M. J. Burzynski to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3 - Application for Renewed Operating Licenses," dated December 31, 2003.