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December 9, 2008

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

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-391

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 2 - LICENSING BASIS PRESERVATION AND CONSTRUCTION REFURBISHMENT PROGRAM FOR STRUCTURES, SYSTEMS AND COMPONENTS (SSCs) (TAC NO. MD6311)

References:

1. TVA letter dated June 16, 2008, "Watts Bar Nuclear Plant, Unit 2 - Regulatory Framework for the Completion of Construction and Licensing for Unit 2 - Revision 1 (TAC No. MD6311)"

2. NRC letter dated May 8, 2008, "Watts Bar Nuclear Plant, Unit 2 - Assessment of Remaining Operating License Application Review Scope and Requests for Additional Information (TAC No. MD6311)"

3. TVA letter dated July 29, 2008, "Watts Bar Nuclear Plant (WBN) - Generic Communications Status for Unit 2 - Revision 1 (TAC NO. MD8314)"

The purpose of this letter is to provide for your information two TVA administrative procedures that will be used to define the process to satisfy two "Open Actions Required for Licensing" from TVA's June 16, 2008 letter (Reference 1). Enclosure 1 provides TVA's New Generation Development and Construction (NGDC) Procedure PP-20, "Unit 2 Licensing Basis Preservation," recently issued to address Unit 2 Licensing Basis preservation as design and construction activities progress. This procedure provides TVA's process to complete the first "Open Action Required for Licensing" from Reference 1 and was developed based upon previous discussions with NRC and on Figure 1 contained in the May 8, 2008 letter (Reference 2). It should be noted that this procedure references previously docketed matrices included in Regulatory Framework correspondence (NUREG-0847 review items, Generic Communications [Reference 3],

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TVA Nuclear Performance Plan's Corrective Action Program Plans/Special Programs, etc.). As directed by NGDC PP-20, these matrices are to be reviewed by project personnel when answering screening questions (Enclosure 2) regarding potential licensing basis effects. These screening questions are being incorporated into the Bechtel design control process (Project Procedure No. 25402-3DP-G04G-00081-000, "Engineering Document Construction Release [EDCR] Process"), in order to identify potential impacts prior to Unit 2 designs being released. This procedure revision should occur prior to the end of the current calendar year. As noted in References 1 and 3, TVA will provide periodic updates on the status of NUREG-0847 topics and Generic Communications as part of construction completion and licensing of Unit 2. TVA plans to keep this procedure current as updates to the matrices are supplied periodically to NRC but does not plan to resubmit the procedure each time it is revised.

Enclosure 3 provides Procedure 25402-000-GPP-0000-TI216, "Watts Bar Unit 2 Completion Project Refurbishment Program," which addresses those Unit 2 SSCs that were placed in the WBN Unit 2 Lay-up Program but will undergo an inspection and restoration program prior to Unit 2 licensing. It should be noted that piping previously exposed to harsh environmental areas will be inspected. In addition, cabling is being addressed separately by the Cable Issues Corrective Action Program Plan. This procedure addresses the second "Open Actions Required for Licensing" from Reference 1.

There are no new "Open Actions Required for Licensing" made in this submittal.

If you have any questions, please contact me at (423) 365-2351.

Sincerely,

M. Bajestani

Masoud Bajestani
Watts Bar Unit 2 Vice President

Enclosures
cc: See page 3

cc (Enclosures):

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ENCLOSURE 1

NEW GENERATION DEVELOPMENT AND CONSTRUCTION (NGDC) PROCEDURE PP-20, "WATTS BAR NUCLEAR PLANT UNIT 2 LICENSING BASIS PRESERVATION"

LICENSING BASIS PRESERVATION
Revision 0

Quality Related - Yes □ No ■

Sponsor	10/8/08 Date
NA Qualified Reviewer*	Date
N/A NA Reviewer*	Date
Engineering Manager	10-10-08 Date
Startup & Test Manager	10/9/08 Date
Operations Manager	10/09/08 Date
N/A Construction Manager	Date
N/A Maintenance & Mods Manager	Date
N/A NA Project Manager	Date
N/A Cost & Scheduling Manager	Date
Licensing Manager	10/9/08 Date
N/A Project Controls Manager	Date
N/A Project Support Manager	Date
Bechtel Project Manager	10/13/08 Date
Unit 2 Vice President	11/17/08 Date

*Only required for Quality Related Procedures

REVISION LOG

Revision Number	Effective Date	Pages Affected	Description of Revision
0		All	Initial Issue

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I. PURPOSE

This procedure describes the methods that will be used and/or identifies the processes (governed by other procedures) that are in place for the preservation of WBN Unit 2 Licensing basis during the time that Unit 2 is under construction.

II. SCOPE

This procedure applies to Nuclear Generation Development and Construction (NGDC) personnel at WBN as an aid in determining potential changes that affect the Design and Licensing Basis while performing Unit 2 construction activities (i.e., design, construction, procurement, equipment restoration/preventative maintenance required for the completion of WBN Unit 2). The screening of each change is to be implemented in conjunction with Bechtel Construction Completion Project Procedure 25402-000-GPP-000-N1204, "Engineering Document Construction Release (EDCR) Process."

III. PROCESS

A. General Background

In 1973, TVA received a construction permit for each WBN unit under Title 10 of the Code of Federal Regulations (10 CFR) Part 50. In 1976, TVA applied for operating licenses for both Unit 1 and Unit 2. Construction progressed until 1985, when WBN Unit 1 was thought to be essentially complete and nearly ready to receive an operating license, as documented in NUREG-0847, "Safety Evaluation Report Related to the Operation of Watts Bar Nuclear Plant, Units 1 and 2," through Supplement 4. NRC reviews completed through Supplement 4 applied to both WBN units.

When a number of deficiencies were identified shortly before the WBN Unit 1 operating license was expected to be issued, NRC sent a letter to TVA on September 17, 1985, requesting information under 10 CFR 50.54(f), on TVA's plans to address the deficiencies for its operating and construction activities at WBN and at the other TVA nuclear plants. In response to this letter, TVA developed the Nuclear Performance Plan (NPP) to address corporate (Volume 1) and site-specific issues (Volume IV for WBN), establishing programs to address a wide variety of material, design, and programmatic deficiencies. WBN Unit 2 construction was suspended at about that time, with major structures in place and equipment such as reactor coolant system piping installed.

Satisfactory resolution of NPP topics for WBN Unit 1 was later documented in the supplements of NUREG-0847, with Supplement 19 supporting issuance of the low power license for WBN Unit 1 in November 1995, and Supplement 20 supporting issuance of the full power license for WBN Unit 1 in February 1996. These supplements concluded that WBN Unit 1 met applicable regulations and guidance. Topics addressed in NUREG-0847 Supplements 5 through 20 often addressed both WBN Units 1 and 2, but sometimes addressed only WBN Unit 1.

On July 14, 2000, TVA informed the NRC that WBN Unit 2 meets the NRC's definition for deferred nuclear plant units as described in the Commission's Policy Statement on Deferred Plants (52 FR 38077, October 14, 1987).

On November 14, 2006, TVA informed the NRC of its intent to perform a study of the feasibility of completing WBN Unit 2. Results of this study were subsequently presented to the TVA Board of Directors in August 2007. In anticipation of TVA's decision to complete WBN Unit 2, the NRC staff reviewed the Commission Policy Statement on Deferred Plants and the WBN Unit 2 regulatory history to develop recommendations for how to complete the licensing review. This effort was summarized in a Commission paper, SECY-07-0096, "Possible Reactivation of Construction and Licensing for the Watts Bar Nuclear Plant Unit 2," dated June 7, 2007.

On July 25, 2007, the Commission issued a Staff Requirements Memorandum (SRM) based on SECY 07-0096. The SRM directed the NRC staff to use the current licensing basis for WBN Unit 1 as the reference basis for the review and licensing of WBN Unit 2. The Commission stated that significant changes to this licensing approach would be allowed where the existing backfit rule would be met or as necessary to support dual unit operation. The Commission also expected TVA to review any exemptions, reliefs, and other actions that were specifically granted for Unit 1, to determine whether the same allowance is appropriate for Unit 2 and submit such requests to the NRC for its review and approval as necessary. Further, the Commission directed the NRC staff to encourage TVA to adopt updated standards for Unit 2 where it would not significantly detract from design and operational consistency between Units 1 and 2, and to take opportunities to resolve issues such as generic safety issues where the unirradiated state of WBN Unit 2 would make the issue easier to resolve before plant operation.

On August 3, 2007, TVA informed the NRC of its intent to complete construction and licensing of the WBN Unit 2. In this letter, TVA described its intent to align the licensing and design bases for WBN Units 1 and 2 to the fullest practical extent. TVA stated that it would complete WBN Unit 2 in compliance with applicable regulations and that it would incorporate modifications made to WBN Unit 1 into the Unit 2 licensing and design bases. In addition, by letter dated May 8, 2008, TVA requested an extension of the completion date for Unit 2 which resulted in NRC issuing an order on July 7, 2008, extending the Unit 2 construction permit to March 31, 2013.

The NRC staff examined the information provided by the August 3, 2007 TVA letter along with previously-completed NRC safety evaluations in order to reconstitute the status of remaining licensing issues. Following numerous discussions between the staff and TVA along with the further exchange of information between TVA and NRC (which included primarily the Unit 2 Regulatory Framework letter submitted January 29, 2008, and subsequently updated by TVA letters dated March 13, 2008, and June 16, 2008), the staff provided the results of their review in a letter dated May 8, 2008.

In part, NRC's Letter identified the methodology that was being used by the staff for the identification of overall review scope for the WBN Unit 2 operating license review, and for screening previously-complete reviews to determine if they remain valid and relevant. Figure 1 below provides a flow chart of that methodology.

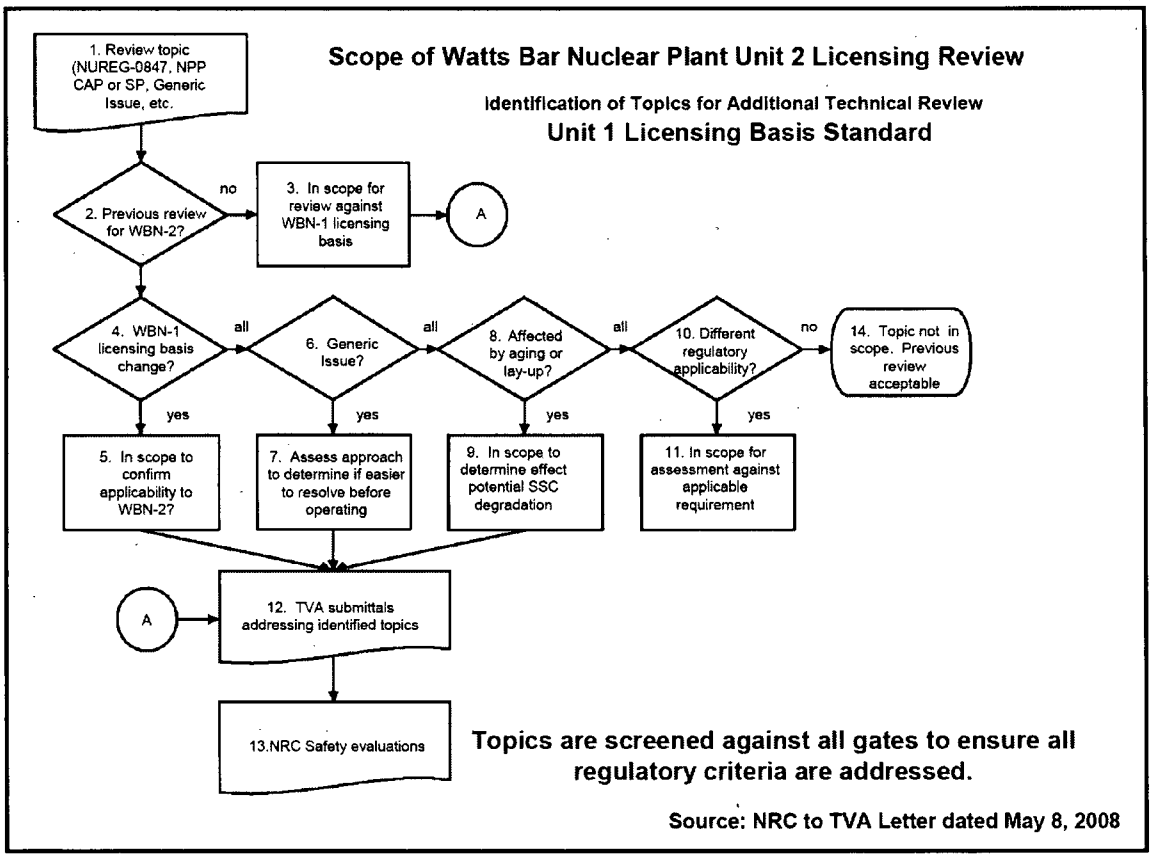

Figure 1

B. NRC Review Scope

1. <u>Identification of Overall Review Scope</u>

The NRC staff's initial effort was to define the complete scope of topics that must be reviewed to complete the WBN Unit 2 licensing review. The Table of Contents of NUREG-0847 defines the majority of topics and provides the basic organizational structure used during this review effort. Topics previously identified and resolved by the TVA NPP were addressed and documented in NUREG-1232, Volume 4. Additional topics, such as the Maintenance Rule, were identified by review of the Table of Contents of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." In addition to remaining Unit 2 NPP items, issues identified in generic communications, action items from NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980, and other regulatory topics were included.

Box 1 of Figure 1 identifies the screening review starting point for each of the identified review topics.

2. **Inventory of Previous Review Status**

Each review topic was evaluated (as denoted by Box 2 of Figure 1) to determine its previous Unit 2 review status and to determine if an additional review is needed. If a topic within the overall scope has not been previously reviewed, then TVA would need to make a submittal addressing how that issue would be resolved for WBN Unit 2. The NRC would then complete a safety evaluation for that topic after having requested additional information if necessary to complete the review. This process is shown in Figure 1, Boxes 3, 14, and 15.

However, many licensing issues for WBN Unit 2 have been resolved in NUREG-0847 and its supplemental safety evaluation reports (SSERs). NUREG-0847 and SSERs 1 through 4 addressed both WBN units when construction at the site was stopped to address the deficiencies described in the NPP. Topics resolved in NUREG-0847 through SSER 4 apply to both WBN Units 1 and 2, if those topics were not the subject of a subsequent review in SSERs 5 through 20. NUREG-0847 supplements 5 through 20 document completion of the NRC staff's review to support WBN Unit 1 licensing. In many cases, the staff's review applied to WBN Unit 2, as well. The staff reviewed SSERs 5 through 20 to determine which WBN Unit 2 topics have been reviewed and resolved for WBN Unit 2.

3. **Evaluation of Previously-Reviewed Topics**

Even if a topic had been previously reviewed and closed within NUREG-0847 and its supplements, there are circumstances that could lead to revision of a previous evaluation, or a new evaluation being performed. A series of tests as denoted by Blocks 4, 6, 8 and 10 of Figure 1 provides a means to determine if a previous evaluation needs to be revisited. The following discussion below reflects the approach taken.

4. **Effect of WBN Design and Licensing Basis Changes**

The first test assesses whether WBN Unit 1 design and licensing basis changes to be implemented for Unit 2 would affect previous safety evaluations. TVA intends to complete WBN Unit 2 in a manner that aligns the licensing and design bases for WBN Units 1 and 2 to the fullest practical extent. Consistent with this goal, TVA will incorporate modifications made to Unit 1 into Unit 2. These modifications will include, for example, changes implemented on WBN Unit 1 in accordance with 10 CFR 50.59. It is anticipated that some set of these changes modifies the facility design that was previously reviewed in NUREG-0847 and its supplements. The process described in Section C.1.a of this procedure will confirm that these modifications meet regulatory requirements and determine whether affected NUREG-0847 topics need to be re-opened.

As a result, TVA intends to provide a complete list of differences between WBN Units 1 and 2 on or before October 23, 2009. However, since this is two years or more prior to Unit 2 operation, there could be additional design changes after October 23, 2009, that could lead to additional differences between the units. Section C.1.a of this procedure describes the process to ensure that the Final Safety Analysis Report (FSAR)

submitted for the WBN Unit 2 operating license reflects the final plant configuration in accordance with 10 CFR 50.34 which will identify additional differences between the units implemented after October 23, 2009.

There are also potential issues where existing WBN Unit 1 configurations are applicable to Unit 2 for multi-unit operations. TVA's response addressed this issue in part by stating that design differences between the two units will be submitted on or before October 23, 2009. Section C.1.b of this procedure defines the process used to confirm Unit 1 configurations that will be applied to Unit 2 are applicable to Unit 2 with consideration of the differences between the units.

In addition, there are exemptions, reliefs, and other actions specifically granted for Unit 1 to determine if the same allowance is appropriate for Unit 2. Section C.1.c of this procedure describes TVA's process for determining if the same allowance is appropriate for Unit 2.

5. **Generic Issue Resolution Before Plant Operation**

As part of the July 25, 2007 SRM SECY 07-0096, the Commission directed that "the staff and TVA should, during the licensing period, look for opportunities to resolve such issues where the unirradiated state of Watts Bar 2 makes the issue easier to resolve than at Watts Bar 1."

To accomplish this, the staff plans to screen generic issues to determine if an alternative approach is appropriate before WBN Unit 2 begins operating. It is expected that this screening will be focused predominately on generic issues arising since 1996. Generic issues resolved before that time would have been before Unit 1 operation. The potential for a different approach considering the unirradiated state of Unit 2 would be expected only when radiological issues were factors in determining an approach for Unit 1. To aid in this effort, TVA submitted information regarding the status of generic issues for WBN Unit 2 in letters dated September 7, 2007, and March 20, 2008. NRC requested additional information on specific Generic Communications on May 28, 2008. TVA provided the additional information on July 29, 2008. NRC on August 25, 2008, agreed with the status of Generic Communications.

This assessment is reflected in Boxes 6 and 7 of Figure 1. Section C.1.d of this procedure addresses how future generic issues identified will be handled prior to Unit 2 operation until transfer to the existing operating process will be made.

6. **Potential Degradation or Structures. Systems, and Components (SSCs)**

The NRC staff has identified the potential for degradation of SSCs due to the effects of aging since SSCs were fabricated or installed, or due to the lack of preventive maintenance during the period of time WBN Unit 2 construction was suspended. Before an operating license for WBN Unit 2 can be issued, TVA must demonstrate that all SSCs meet their 40-year design basis requirements over the license period. Section C.1.e of this procedure provides TVA's process to address potential degradation of SSCs.

This screening test to assess the impact of potential component degradation on previously-reviewed topics is shown in Figure 1, Boxes 8 and 9.

7. **Applicability of New Regulations**

To issue an operating license for WBN Unit 2, the NRC will need to confirm that, among other things, the WBN Unit 2 application meets regulatory requirements. Since Unit 2 will be licensed some 16 years after the WBN Unit 1 operating license was issued, new regulations have been issued in the interim addressing a variety of topics. The NRC staff plans to document its review of any new requirements applicable to WBN Unit 2 in a supplement to NUREG-0847. Section C.1.f of this procedure provides TVA's process to review regulatory changes made during the Unit 2 licensing period to determine which if any affect WBN Unit 2.

Part of the process to be used for this confirmation is shown in Figure 1, Boxes 10 and 11.

8. **Screening Against All Criteria**

The logic given for the screening criteria shown in Figure 1, Boxes 4, 6, and 8, yields either a "yes" (topic requires additional review) or an "all" result. The purpose of the "all" outcome is to ensure all screening criteria are addressed for all previously-reviewed topics; each topic is screened against all remaining criteria regardless of the outcome for previous tests. For example, it is possible that a topic that comes into the review scope due to a WBN Unit 1 licensing basis change that will be applied to Unit 2 is also affected by potential SSC degradation (Box 8) or by a new regulatory requirement (Box 10).

9. **Acceptance of Previous Review**

If the evaluation for a topic does not meet any of the criteria applied in Figure 1, Boxes 4, 6, 8, or 10, then the existing evaluation of that topic remains valid.

C. Licensing Basis Preservation

1. **Effect of WBN Unit 1 Design and Licensing Basis Changes**

a. **Unit 1 Changes Implemented on Unit 2**

1. From the time that the WBN Unit 1 operating license was granted, FSAR changes have been made in accordance with 10 CFR 50.71(e) to reflect modifications installed in the plant. As part of the Unit 2 FSAR "red-line" effort (submitted on February 8, 2008), TVA performed an initial review of those WBN Unit 1 FSAR changes to identify and categorize significant changes that will eventually become a part of the combined Unit 1 and Unit 2 FSAR at Unit 2 fuel load. The purpose of this document is to serve both NRC and TVA personnel during the Unit 2 Licensing period as a useful aid to help identify and account for Unit1/Unit 2 differences.

   In addition, TVA submitted the 1995 version of the FSAR as of Amendment 91 on July 2, 2008. This version was accurate when Unit 1 received its operating license in 1995 and will serve as the Unit 2 baseline document. As part of the detailed engineering associated with the completion of WBN Unit 2, the Unit 1 modifications to be implemented on Unit 2 will be reviewed for impact against this baseline document. TVA will provide amendments for NRC review in accordance with 10 CFR 50.90 and TVA NGDC Project Procedure (PP) 10,

"Watts Bar Nuclear Plant Unit 2 Changes to Final Safety Analysis Report," as part of Unit 2 construction completion and licensing. During the amendment preparation process, TVA will review the affected NUREG-0847 topics to determine the impact on the previous review. If TVA determines that the status of a NUREG-0847 topic has changed, TVA will submit an amendment to the FSAR for NRC review and concurrence and re-open the topic in the Regulatory Framework table if appropriate. (It should be noted that the Unit 2 Regulatory Framework was submitted in TVA letter dated January 29, 2008, and updated by subsequent letters dated March 13, 2008, and June 16, 2008.)

TVA may also install modifications on WBN Unit 2 that are different than were installed on WBN Unit 1. An example of this type of change is the use of the Westinghouse Common Q Post Accident Monitoring System. This system is being installed because the system installed on WBN Unit 1 (ICCM-86 system) is no longer available. This change has been captured in the Regulatory Framework Table described above, and TVA plans to submit an FSAR amendment for NRC review and approval when engineering of the modification is complete. Modifications, identified as fitting this category, will be addressed in this manner.

2. Therefore, screen each design change/modification to be implemented on Unit 2 in accordance with Bechtel Construction Completion Project Procedure, 25402-000-GPP-000-N1204, "Engineering Document Construction Release (EDCR) Process," against Attachments 1 through 4 of this procedure.

3. Notify/discuss with Unit 2 Licensing those changes/modifications that do not clear the screening process for these may require additional submittal(s) for NRC review and approval.

b. Unit 1 Configurations to be applied to Unit 2

1. As discussed in item a above, modifications to WBN Unit 2 will be reviewed for impact against FSAR Amendment 91 and the affected NUREG-0847 topics. Changes that are implemented on both units for multi-unit operation will be evaluated using the 10 CFR 50.59 process for the Unit 1 change and evaluated against the FSAR and NUREG-0847 topic for Unit 2. TVA will provide amendments to the WBN Unit 2 FSAR for NRC review in accordance with 10 CFR 50.90 for changes that are determined to affect Unit 2 or dual unit operations. The Design Baseline Verification Program (one of the NPP Corrective Action Program Plans) will also ensure the existence of calculations that are consistent with the safety-related plant design including multi-unit operations. In addition to the processes described above, TVA is assessing the potential for operational and maintenance differences between WBN Unit 1 and Unit 2 during the development of modifications to be installed in Unit 2. This process is controlled under Bechtel Procedure 24502-000-GPP-0000-N1204, "Engineering Document Construction Release (EDCR) Process," which controls the development and installation of permanent equipment in the plant.

2. Screen each design change/modification to be implemented on Unit 2 in accordance with the above procedure against Attachments 1 through 4 of this procedure.

3. Notify/discuss with Unit 2 Licensing those changes/modifications that do not clear the screening process for these may require additional submittal(s) for NRC review and approval.

c. Unit 1 Specific - Exemptions, Reliefs, and Other Actions

1. On October 11, 2007, TVA submitted a list of exemptions, reliefs, and other actions granted for WBN Unit 1 that would be required for WBN Unit 2 construction completion. The letter and attachment provided the exemption, relief, or other action; the applicability to WBN Unit 2; tie approval reference; and a justification. If TVA determines based on discovery or emerging issues that a request for exemption or code relief is appropriate, TVA will submit to the NRC for review and concurrence the request in accordance with TVA Procedure Business Practice (BP) 213, "Managing TVA's Interface with NRC."

2. Screen each design change/modification to be implemented on Unit 2 in accordance with Bechtel Construction Completion Project Procedure, 25402-000-GPP-000-N1204, "Engineering Document Construction Release (EDCR) Process," against Attachments 1 through 4 of this procedure.

3. Notify/discuss with Unit 2 Licensing those changes/modifications that do not clear the screening process for these may require additional submittal(s) for NRC review and approval.

d. Generic Issue Resolution before Plant Operation

1. To address generic issue resolution, TVA has reviewed the list of Generic Communications. The list was roughly divided into two categories with the division primarily falling in 1995 at the point where Unit 1 was licensed.

   For those Generic Letters and Bulletins issued prior to 1995, TVA submitted, on September 7, 2007, the Unit 2 status of each Generic Letter or Bulletin based upon a review of actions taken for Unit 1. As part of the completion of the WBN Unit 2 actions for each Generic Letter and Bulletin, TVA will track and validate that the Unit 2 implementing procedures, technical specifications, and other activities include the same requirements as Unit 1.

   For those Generic Letters and Bulletins issued after 1995, TVA provided by separate correspondence on September 7, 2007, initial responses to these items based on the Unit 1 precedent of actions taken. TVA's objective in this regard is to align the licensing and design bases of Watts Bar Units 1 and 2 to the fullest extent practicable. If TVA determines based on discovery or emerging issues (controlled under TVA BP-247, "Regulatory Emerging Issues Management Process") that a different strategy or additional action is appropriate, TVA will submit such changes to the NRC for review and concurrence.

   New generic communications issued during the completion of construction and licensing activities for Unit 2 (e.g., Generic Letter 2008-01) will be responded to in accordance with the schedule requirements for the individual generic communication. This will allow consideration of both WBN units and aligns the licensing and design basis of the units to the fullest extent practicable.

2. Screen each design change/modification to be implemented on Unit 2 in accordance with Bechtel Construction Completion Project Procedure, 25402-000-GPP-000-N1204, "Engineering Document Construction Release (EDCR) Process," against Attachments 1 through 4 of this procedure.

3. Notify/discuss with Unit 2 Licensing those changes/modifications that do not clear the screening process for these may require additional submittal(s) for NRC review and approval.

e. Potential Degradation of SSCs

1. The population of WBN Unit 2 SSCs fall into two categories: WBN Unit 2 SSCs that are shared between WBN Unit 1 and Unit 2 (common equipment), and WBN Unit 2 SSCs that were put into the WBN Unit 2 lay-up program.

   The first population category consists of SSCs that are shared between WBN Unit 1 and Unit 2 and are in operations supporting Unit 1. This population of SSCs is defined, monitored, trended, and reported in accordance with the Maintenance Rule requirements delineated in TVA Technical Instruction 119 and Standard Program and Process 6.6. The TVA Maintenance Rule Program monitors the performance or condition of SSCs, against performance criteria, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. This population is expected to undergo normal age-related degradation while in service supporting WBN Unit 1. TVA believes that application of license renewal process is appropriate to deal with age-related degradation issues associated with this population of SSCs.

   The second population category represents the WBN Unit 2 SSCs that were put into the WBN Unit 2 lay-up program. TVA has issued NGDC Construction Completion Project Procedure 25402-MGT-0007, "Watts Bar Unit 2 Completion Project Refurbishment Program," which defines an inspection and restoration process that addresses this component population. Component inspection and restoration activities will ensure the equipment supports the plant design lifetime by reworking or replacing items based on programmatic requirements, vendor recommendations, operational experience, or sound technical judgment. Component Testing and System Preoperational Test programs serve as the final confirmation of the components restoration.

f. <u>Applicability of New Regulations</u>

1. To issue an operating license for WBN Unit 2, the NRC will need to confirm that, among other things, the WBN Unit 2 application meets regulatory requirements. Since Unit 2 will be licensed some 16 years after the WBN Unit 1 operating license was issued, new regulations have been issued in the interim addressing a variety of topics. The NRC staff plans to document its review of any new requirements applicable to WBN Unit 2 in a supplement to NUREG-0847.

   If TVA determines based on discovery or emerging issues (controlled under TVA BP-247) that a different strategy or additional action is appropriate, TVA will submit such changes to the NRC for review and concurrence.

D. Roles and Responsibilities

1. WBN Unit 2 Vice President

   The WBN Unit 2 Vice President ensures that project personnel have the resources and processes in place in order to preserve the design and licensing basis and to identify and submit changes, if necessary, for NRC review, during the implementation of Unit 2 completion activities.

2. Unit 2 Licensing Manager

   The WBN Unit 2 Licensing Manager provides oversight of the preservation process established in this procedure to ensure the existing design and licensing basis is protected as reviewed or identify and submit changes to, if necessary, for NRC review, during the implementation of Unit 2 completion activities.

3. Departmental/Line Manager

   The WBN Unit 2 Departmental/Line Manager implements the preservation process established in this procedure to ensure the existing design and licensing basis is protected as reviewed or identify and submit changes to Licensing for evaluation, if necessary, for NRC review, during the implementation of Unit 2 completion activities.

IV. RECORDS

A. QA Records

None

B. Non-QA Records

None

V. DEFINITIONS

Closed Item - A matter previously reported as a noncompliance, an exercise weakness, an unresolved item, an inspection follow-up item, or a construction deficiency report that the inspector concludes had been satisfactorily resolved, based on information obtained during the current inspection.

Complete and Accurate Information - Information provided to NRC, which would have had a natural tendency or capability to influence an agency decisionmaker, must be both complete and accurate. Conscious omission of information relevant to inspection issue must be considered for its effect as well as the material provided. (Reference 10 CFR 50.9)

Final Safety Analysis Report (FSAR) - The FSAR is a document prepared in accordance with 10 CFR 50.34(b) and submitted to the NRC in support of the operating license application. The FSAR describes in detail the final design and actual construction of the nuclear power plant and presents the evaluation and analysis necessary to conclude that the plant can be operated safely. The FSAR is part of the licensing basis for receipt of an operating license.

License means a license issued under the regulations in 10 CFR 30 though 36, 39, 40, 50, 60, 61, 63, 70, or 72.

Attachment 1

Master Table – Regulatory Framework Letter

SAFETY EVALUATION REPORT AND SUPPLEMENTS (NUREG-0847) REVIEW MATRIX MASTER TABLE

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
1.0.0		NA	Overview only
1.1.0		NA	Overview only
1.1.1		NA	Overview only
1.1.2		NA	Overview only
1.1.3		NA	Overview only
1.1.4		NA	Overview only
1.2.0		NA	Overview only
1.3.0		NA	Overview only
1.3.1		NA	Overview only
1.3.2		NA	Overview only
1.4.0		NA	Overview only
1.5.0		NA	Overview only
1.6.0		NA	Overview only
1.7.0		NA	Overview only
1.8.0		NA	Overview only
1.9.0		NA	Overview only
1.10.0		NA	Overview only
2.0.0	0	C	Approved for both units in SER.
2.1.0	0	C	Approved for both units in SER.
2.1.1	0	C	Approved for both units in SER.
2.1.2	0	C	Approved for both units in SER.
2.1.3	0	O	SRP requirement. Unit 2 Action: Update FSAR for present and projected population over the lifetime of the plant.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
2.1.4	0	O	"CONCLUSIONS" left open until all items in subsection are closed.
2.2.0	0	C	Approved for both units in SER.
2.2.1	0	O	SRP requirement. Unit 2 Action: Update FSAR for potential external hazards and hazardous materials.
2.2.2	0	O	SRP requirement. Unit 2 Action: Update FSAR for projected annual number of aircraft flights.
2.2.3	0	O	"CONCLUSIONS" left open until all items in subsection are closed.
2.3.0	0	C	Approved for both units in SER.
2.3.1	0	C	Approved for both units in SER.
2.3.2	0	C	Approved for both units in SER.
2.3.3	0	C	See 13.3.3 (Emergency Preparedness Evaluation Conclusions).
2.3.4	14	C	TVA updated information on portions of the metrology program in FSAR amendment 83. This was reviewed and found acceptable in SSER14.
2.3.5	14	C	TVA updated information on portions of the metrology program in FSAR amendment 83. This was reviewed and found acceptable in SSER14.
2.4.0	0	C	Approved for both units in SER.
2.4.1	0	C	Approved for both units in SER.
2.4.2	0	C	Approved for both units in SER.
2.4.3	0	C	Approved for both units in SER.
2.4.4	0	C	Approved for both units in SER.
2.4.5	0	C	GL 89-22, "Potential For Increased Roof Load Due to Changes in Maximum Precipitation" – Answer to informal question provided in TVA letter dated December 16, 1981, and subsequently included in FSAR. GL did not require a response. No further action required.
2.4.6	0	C	Approved for both units in SER.
2.4.7	0	C	Approved for both units in SER.
2.4.8	3	C	CONFIRMATORY ISSUE for design basis groundwater level for ERCW pipeline Amendment 50 to the FSAR (May 1, 1984) provided a description of the analysis used to determine the 25-year groundwater level for the ERCW pipeline. Staff closed issue in SSER3.
2.4.9	0	O	SRP requirement. Unit 2 Action: Update FSAR for present and projected use of local and regional groundwater.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
2.4.10	0	CT	Staff found flood emergency plan and draft Technical Specifications acceptable in original 1982 SER. Unit 2 Action: Address in Technical Specifications as appropriate.
2.4.11		NA	Addressed in 2.4.6.
2.4.12		NA	Addressed in 2.4.7.
2.4.13		NA	Addressed in 2.4.9.
2.4.14		NA	Addressed in 2.4.10.
2.5.0	0	C	Approved for both units in SER.
2.5.1	0	C	Approved for both units in SER.
2.5.2	0	C	Approved for both units in SER.
2.5.3	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
2.5 .4	11	C	CONFIRMATORY ISSUE for design differential settlement of piping and electrical components Analysis was presented to staff in September 1983. Staff found analysis and results acceptable. Staff closed issue in SSER3. ---------- CONFIRMATORY ISSUE for analysis of sheetpile walls Staff performed audit in September 1982, and determined TVA had used reasonable assumptions. Staff closed issue in SSER3. ---------- CONFIRMATORY ISSUE for material and geometric damping in soil-structure interaction (SSI) analysis Staff performed audit in September 1982, and determined TVA had used reasonable assumptions. Staff closed issue in SSER3. ---------- OUTSTANDING ISSUE (1) on liquefaction beneath ERCW pipelines and Class 1E electrical conduit. Amendment 50 to the FSAR (May 1, 1984) provided a description of the underground barriers along the ERCW pipelines. Staff agreed the barriers provide sufficient confinement to any liquefied soil. Staff closed issue in SSER3. ---------- FSAR amendment 54-63 was reviewed in SSER9. NRC determined that the conclusions previously issued in the SER and SSER3 remained unchanged. ---------- The Special Program (SP) for Soil Liquefaction was reviewed in SSER11. NRC IR 50-390/92-45 and 50-391/92-45 concluded that TVA had correctly implemented the SP and that it was closed. SSER11 accepted the implementation for WBN Unit 1. Per TVA letter dated August 3, 2007, implementation of the Soil Liquefaction SP is complete for both units.
2.5 .5	0	C	Approved for both units in SER.
2.5 .6	0	C	Approved for both units in SER.
2.6 .0	0	C	Approved for both units in SER.
3.0 .0	0	C	Approved for both units in SER.
3.1 .0	0	C	Approved for both units in SER.
3.1 .1	0	C	Approved for both units in SER.
3.1 .2	0	C	Approved for both units in SER.
3.2 .0	14	C	In SSER14, the staff reviewed revisions to Table 3.2-2, "Summary of Criteria - Mechanical System Components", and found the table acceptable.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.2.1	8	C	CONFIRMATORY ISSUE for seismic classification of structures, systems, and components important to safety The staff reviewed Amendment 49 to FSAR and actions implemented by TVA to address ERCW seismic classification in SSER3 and found them acceptable, pending verification of actions. Staff closed issue on ERCW seismic category upgrade and seismic classification in SSER5. ---------- CONFIRMATORY ISSUE for ERCW upgrade to seismic category 1 Staff verified that required portion of ERCW had been upgraded or replaced satisfactorily in SSER5 and closed this issue. ---------- In SSER6, the staff addressed and resolved an issue on Category I boundary. ---------- OUTSTANDING ISSUE Involving seismic classification of cable trays and conduits In SSER6, staff identified an issue on seismic classification of cable trays and conduits being categorized as I(L). In its May 8, 1991, letter, TVA proposed to analyze conduits as Seismic Category I subsystems. Additionally, in a September 18, 1991 letter, TVA agreed to perform cable tray qualification using conventional linear elastic analysis methods, considering nonlinear response behavior on a case-by-case basis and to submit these cases to the staff for approval. The staff resolved this issue in SSER8.
3.2.2	9	OV	Section 3.2.2 of SSER3 discusses confirmatory issues for seismic classification and upgrade of ERCW that are already included in 3.2.1. ---------- Staff accepted implementation of Heat Code Traceability CAP for Unit 1 in SSER7. Unit 2 Action: Complete CAP using Unit 1 approach. ---------- Staff reviewed updated information in Amendment 68 on use of codes and standards in SSER9 and stated that prior conclusions were unchanged.
3.3.0	0	C	Approved for both units in SER.
3.3.1	0	C	Approved for both units in SER.
3.3.2	0	C	Approved for both units in SER.
3.4.0	0	C	Approved for both units in SER.
3.4.1	0	C	Approved for both units in SER.
3.4.2		NA	Addressed in 3.4.1.
3.5.0	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.5.1	14	C	In SSER9, the staff determined that a new spectrum used for the design of a new DG building and other Category I structures built after 1979 was acceptable. In SSER14, clarification in Amendment 79 on internal missile sources was reviewed and did not change prior conclusions. Staff also reviewed revised information on turbine missiles and concluded that impact of potential missiles was insignificant.
3.5.2	2	C	CONFIRMATORY ISSUE for modifications to protect Diesel Generators TVA submitted a proposed design modification for installation of a reinforced concrete curb around the diesel exhaust stacks to protect them from damage in a letter dated November 24, 1982. The staff found this acceptable and closed this issue in SSER2.
3.5.3	0	C	Approved for both units in SER.
3.6.0	11	OV	In SSER6, the staff accepted TVA approaches involving arbitrary intermediate breaks, determination of intermediate break locations and analysis of jet impingement loads. In SSER11, the staff reviewed results of the MELB Special Program and determined that the conclusion in the SER finding plant design for protection against piping failures outside containment was still valid. Unit 2 Action: Complete Special Program using the Unit 1 approach.
3.6.1	14	C	OUTSTANDING ISSUE involving main steam line break (MSLB) outside containment In a letter dated November 30, 1992, TVA submitted a new evaluation for both Units 1 and 2 accounting for increased environmental temperatures in the MSVV rooms due to release of superheated steam and later submitted, by letter dated March 28, 1994, additional information related to the assumptions made in this analysis for both units. The staff reviewed this information together with their detailed evaluation and acceptance of the same methodology applied at Sequoyah and concluded that the MSLB analysis for the WBN MSVV rooms, including the effects of superheated steam, was acceptable and identified this issue as resolved in SSER14. ---------- In SSER14, the staff reviewed the construction of response spectra for the steel containment vessel resulting from the compartment pressure transients caused by pipe break and TVA modeling of the SCV for both units (see TVA letter dated December 30, 1993) and concluded that the methodology for obtaining shell dynamic displacements and construction of spectra were acceptable.
3.6.2	14	C	The 3.6.2 discussion in SSER14 on response spectra for the SCV refers to the evaluation provided in 3.6.1.
3.6.3	12	C	New section in SRP 1987. Approved for both units in Appendix J of SSER5. The staff concluded in SSER12 that TVA may eliminate pressurizer surge line rupture from the design basis for Units 1 and 2.
3.7.0	6	OV	The staff concluded in SSER6 that FSAR section 3.7 which was added to describe Set A, Set B and Set C seismic analysis was consistent with the Seismic Analysis CAP. Unit 1 Action: Complete CAP using the Unit 1 approach.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.7.1	16	OV	OUTSTANDING ISSUE involving update of FSAR for seismic design issues The staff reviewed FSAR Amendment 68 and found that required changes had been incorporated into the FSAR, as committed to in TVA letter dated December 18, 1990, for Units 1 and 2, and issue was deemed resolved in SSER6. SSER9 stated the Seismic Analysis CAP was acceptably implemented for Unit 1. SSER16 discusses use of a vertical PGA of .15g rather than .18g for Set B spectra and determined that it was acceptable. Unit 2 Action: Complete CAP using Unit 1 approach.
3.7.2	16	OV	3.7.2.1.2: OUTSTANDING ISSUE involving mass eccentricity In a letter dated May 8, 1991, for Units 1 and 2, TVA provided clarification that actual mass eccentricities from such items as equipment hatch and lock used in evaluating the steel containment vessel for an earthquake load were replaced by a 5% accidental eccentricity. This was demonstrated to be conservative. TVA also proposed a revision to the FSAR to document this change. The staff found this acceptable and resolved this issue in SSER8. ---------- 3.7.2.1.2: OUTSTANDING ISSUE involving comparison of Set A vs. Set B response The staff considered this item (opened in SSER6) resolved in SSER11 based on audits and inspections since SSER6. Unit 2 Action: Complete Seismic Analysis CAP using the Unit 1 approach. ---------- In SSER16, the staff discussed the review and acceptability of the NSSS-ICS modeling for seismic analysis.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.7 .3	12	OV	OUTSTANDING ISSUE involving number of peak cycles to be used for OBE In SSER6, the staff identified an issue involving the number of peak cycles to be used for OBE. In a letter dated May 8, 1991, for both units, TVA proposed to revise the FSAR for ASME Section III Class I piping analysis to include the assumption of 5 OBEs and 1 SSE and a minimum of 10 peak stress cycles per event. The staff accepted this in SSER8. ---------- OUTSTANDING ISSUE involving use of code cases, damping factors for conduit and use of worst case, critical case and bounding case In SSER6, the staff identified outstanding issues involving code case use, damping factors for conduit and use of worst case, critical case and bounding case. Deficiencies identified in the use of worst case, critical case and bounding calculations were resolved in IR 50-390/93-201, and this issue was considered resolved for Unit 1 in SSER12. Unit 2 Action: Addressed in CAP/SP. The Unit 1 approach will be used for Unit 2. ---------- OUTSTANDING ISSUE involving 1.2 multi mode factor In SSER6, the staff identified an issue involving a 1.2 multi-mode factor. In SSER8, the staff continued to review the use of a multi-mode factor of 1.2. The staff reviewed verification studies performed by TVA to justify the use of a 1.2 multi-mode factor in seismic evaluation of certain sub systems in SSER8 and SSER9 and, after TVA provided further confirmation of supporting calculations, the use of Complete Quadratic Combinations and validity of two degree of freedom predictions in a letter dated October 10, 1991, for both units, the staff considered this issue resolved in SSER9. ---------- Conduit Supports Corrective Action Program. Process was reviewed and determined to be acceptable for Unit 1 in SER dated September 1, 1989. Unit 2 Action: Addressed in CAP/SP. The Unit 1 approach will be used for Unit 2. ---------- In SSER6, the staff reviewed several other seismic analysis considerations including combination of components of earthquake motion, use of load factors in simplified analysis of equipment, consideration of torsional effects of eccentric masses in piping analysis; damping values for cable trays, HVAC and equipment and components; analysis of mounting for equipment and components; and loads and load combinations used in design of HVAC ducts and supports and found them acceptable. In SSER7, the staff reviewed the seismic design of the Refueling Water Storage Tank, the only safety related above ground vertical steel tank in the plant, and found it acceptable.
3.7 .4	0	C	Approved for both units in SER.
3.8 .0	9	C	OUTSTANDING ISSUE involving load combinations and stress allowables In response to staff concerns regarding use of ductility ratio when considering thermally induced stresses, TVA stated in a letter dated April 6, 1992, for both units, that they would use a methodology consistent with SRP 3.8.4 for the design of steel members and use the linear elastic provision of DG-C 1.6.12, Rev. 1, "Evaluation of Steel Structures with Thermal Restraint," except for the energy balance provision of Section C.2.3.1. The staff found this acceptable. TVA also agreed, in its May 8, 1991, letter for both units, that any further sampling of structural welds after the issuance of NCIG-2, Rev. 2 would be to that revision. This issue was resolved in SSER9.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.8 .1	3	C	CONFIRMATORY ISSUE - verify buckling methodology In response to staff concern, TVA submitted a letter dated May 16, 1984, for both units, stating that TVA calculations already accounted for new information from NRC-sponsored research programs, particularly information concerning reinforcement around shell (vessel) opening. Based on their review of the response, the staff closed this issue in SSER3.
3.8 .2	7	C	The staff accepted implementation of the Concrete Quality Special Program for Unit 1 in SSER7. This program is considered closed for Unit 2 based on the work performed for Unit 1. The was identified in a TVA letter dated August 3, 2007, WBN - Unit 2 - Reactivation of Construction Activities
3.8 .3	16	C	The staff reviewed materials, allowable stresses and load cases for the watertight equipment hatch cover in an FSAR Table in Amendment and found them acceptable for both units in SSER14. The staff reviewed allowable stresses for Category I structural steel and found them acceptable for both units in SSER16.
3.8 .4	0	C	Approved for both units in SER.
3.9 .0	0	C	Approved for both units in SER.
3.9 .1	13	OV	OUTSTANDING ISSUE involving assumption in piping analysis for water-hammer due to check valve slam In SSER6, the NRC expressed concern regarding TVA's piping analysis that postulated failure of certain supports, TVA submitted an August 4, 1992, letter stating that, where possible, supports were upgraded in the analysis to maintain structural integrity during the postulated loading scenario. The issue was resolved in SSER13. Unit 2 Action: Modify supports as needed.
3.9 .2	14	C	The staff reviewed "Pre-operational Vibration and Dynamic Effects Testing on Piping", and found this area acceptable in SSER14.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3.9.3	15	OV	3.9.3.1: OUTSTANDING ISSUE involving use of experience data to qualify category I(L) piping The staff identified a concern regarding the use of experience data as a method of seismic qualification of Category I(L) piping in SSER6. TVA stated in a letter dated December 18, 1990 for both units, that it was performing a verification program to validate the original seismic design basis for Category I(L) piping, including a screening criteria based on earthquake experience data to identify items requiring further evaluation and bounding case analysis to demonstrate the conservatism of the screening criteria. In a September 20, 1991, for both units, letter, TVA provided revised criteria for the bounding case analysis. Based on the staff's evaluation, the issue was considered resolved in SSER8. ---------- 3.9.3.3: LICENSE CONDITION - Relief and safety valve testing (II.D.1) Staff found TVA approach in response to this issue, using information from EPRI valve test program and performing modifications to safety and relief discharge piping and supports, was acceptable. Issue was considered resolved in SSER3. ---------- 3.9.3.3: OUTSTANDING ISSUE involving operating characteristics of main steam safety valves The staff identified a concern with operating characteristics of main steam safety valves in SSER6. In a letter dated June 21, 1991, TVA responded to NRC concerns regarding the design and installation of MSSVs stated that all valves and piping components were analyzed for all MSSV discharge loads acting simultaneously, combined with other required loads and this was accepted by the staff. In the same letter, TVA also provided the method used to establish the MSSV adjustment ring settings for plant valves and this was acceptable to the staff. This resolved the issue in SSER7. Unit 2 Action: Provide basis of applicability of Unit 1 MSSV analysis to Unit 2. ---------- 3.9.3.4: CONFIRMATORY ISSUE involving baseplate flexibility and its effect on anchor bolt loads The staff continued to review baseplate flexibility and its effect on anchor bolt loads. The issue remained open in SSER6. The TVA response to this issue, in a letter dated July 26, 1991, for both units, described an update to the previous response for B 79-02 and its civil design standard for concrete anchorage, which incorporated an increase in anchor stiffness and consideration of prying forces for thin baseplates analyzed by hand. The staff determined that this adequately resolved the issue in SSER8. ---------- 3.9.3.4: OUTSTANDING ISSUE involving stiffness and deflection limits for seismic Category I pipe supports The staff questioned new support stiffness and deflection limits for seismic Category I pipe supports in SSER6. The TVA program to demonstrate that change in design criteria which uses stiffness and deflection limits for Category I pipe supports did not compromise the adequacy of pipe supports, was submitted in a TVA letter dated September 30, 1991, for both units, and was found to be acceptable by the staff and the issue was resolved in SSER8. ---------- 3.9.3.4: OUTSTANDING ISSUE, staff was awaiting TVA concurrence on their position with respect to margin for critical buckling of pipe supports In a letter dated May 14, 1984, TVA provided results of a sampling program and determined that compressive stresses for pipe supports did not exceed acceptance criteria established by NRC and staff considered this issue resolved in SSER4.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
			--- The staff reviewed proposed new criteria for service load combinations and associated stress limits for ASME Code Class 1, 2, and 3 pipe supports in SSER6 and found them acceptable. In SSER15, the staff found the response to NUREG-0737, Item II.D.1, "Performance Testing of Relief and Safety Valves," acceptable.
3.9.4	0	C	Approved for both units in SER.
3.9.5	0	C	Approved for both units in SER.
3.9.6	20	OT	LICENSE CONDITION on inservice testing of pumps and valves The staff stated that they were reviewing TVA's response to GL 89-04, addressing acceptable IST programs and the license condition on inservice testing of pumps and valves remained open in SSER5. TVA committed to submit a revised ASME Section XI Inservice Pump and Valve Test Program six months before the projected date of operating license issuance in an August 21, 1989, letter. On this basis, the staff considered that the proposed license condition was no longer required in SSER12. --- OUTSTANDING ISSUE required that Technical Specifications include limiting condition for operation that requires plant shutdown or system isolation when leak limits are not met. Staff had not reviewed Technical Specifications. The safety evaluation in SSER14 states that the staff did not find any IST issues that would prevent issuance of an operating license for Unit 1. The item was resolved in SSER14. Unit 2 Action: Submit Technical Specifications. --- In SSER18, the staff approved a proposed alternative for set pressure testing of the three pressurizer safety relief valves that provide overpressure protection for the reactor coolant system. In SSER20, the staff discussed 13 issues that remained to be resolved for the pump and valve inservice testing program and stated that they had been addressed in a manner that complies with the staff's position and they granted relief for an additional relief request.
3.9.7		NA	Area not addressed in 1981 Standard Review Plan.
3.9.8		NA	Area not addressed in 1981 Standard Review Plan.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3 . 10 . 0	8	OV	In SSER1 the staff discussed their evaluation of the TVA program for qualification of electrical and mechanical equipment for seismic and other loads, and opened the OUTSTANDING ISSUE involving adequacy of frequency test, peak broadening of response spectra, reconciling actual field mounting by welding vs. testing configuration mounted by bolting and need for surveillance and maintenance programs to address aging. The staff provided a status of these issues in SSER3 and closed peak broadening of response spectra, use of damping values, consideration of nozzle loads, and status of seismic qualification. Other specific issues were closed in this supplement as well. In SSER5, the staff stated that this issue remained open. In a letter dated December 1, 1982, TVA provided justification for single-frequency tests to seismically qualify the Reactor Protection System cabinet. This showed that test response spectra (TRS) were substantially higher than broadened required response spectra (RRS) throughout the required frequency range. The staff evaluated test results and building seismic behavior and considered this aspect of the testing issue closed in SSER6. Staff concerns on the impact of aging on seismic performance were resolved in SSER6 based on discussions with TVA technical personnel and review of maintenance and surveillance instruction manuals. There was a specific issue on installing spacers for the 125V DC vital batteries as was done during qualification testing and required by the manufacturer. The issue was closed in SSER6 when it was determined that spacers had been installed. With regard to the overall issue on adequacy of testing, the staff performed an audit as part of Appendix S of SSER9. This included a review of the TVA approach, criteria and action plan to address effect of directional coupling and verification that acceleration at each device location is less than .95g because relay chatter at higher acceleration levels is expected. TRS enveloped RRS for all directions. The staff found the above to be in accordance with SRP 3.10 and IEEE 344-1975 and closed the issue. For reconciling the impact for equipment actually mounted using welding but tested with mounting by bolting, in-situ test results were provided to NRC (in letters dated April 30, 1985, and January 30, 1986) along with Westinghouse report on seismic qualification by analysis and testing for the main control board. The staff reviewed these results and on the basis of the consistency of all results provided, concluded that the issue was resolved in SSER6. Unit 2 Action: Complete Equipment Seismic Qualification CAP using the Unit 1 approach. ---------- In SSER4, the staff reviewed an issue on the vibration of deep draft pumps and found it acceptable. In SSER8, the staff accepted a proposed revision to FSAR Section 3.7:3.16 to indicate that the alternative seismic qualification method is to follow the requirements of IEEE Standard 344-1971 and address the guidelines of SRP Section 3.10.
3 . 11 . 0	15	OV	OUTSTANDING ISSUE - TVA program not submitted at time of SER The EQ program was submitted after issuance of the SER. It was reviewed and found acceptable in SSER15. Unit 2 Action: Complete EQ Special Program.
3 . 12 . 0		NA	Addressed in 3.9.1 through 3.9.3.
3 . 12 . 1		NA	Addressed in 3.9.1 through 3.9.3.
3 . 12 . 2		NA	Addressed in 3.9.1 through 3.9.3.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
3 . 12 . 3		NA	Addressed in 3.9.1 through 3.9.3.
3 . 12 . 4		NA	Addressed in 3.9.1 through 3.9.3.
3 . 12 . 5		NA	Addressed in 3.9.1 through 3.9.3.
3 . 12 . 6		NA	Addressed in 3.9.1 through 3.9.3.
3 . 13 . 0		NA	Area not addressed in 1981 Standard Review Plan.
4 . 0 . 0	0	C	Approved for both units in SER.
4 . 1 . 0	0	C	Approved for both units in SER.
4 . 2 . 0	0	C	Approved for both units in SER.
4 . 2 . 1	13	OT	In SSER13, NRC determined that internal fuel rod pressure was not key design information that needed to be included in the WBN Unit 1 Technical Specifications. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4 . 2 . 2	2	OT	CONFIRMATORY ISSUE on cladding collapse calculations The staff reviewed the calculation for the predicted cladding collapse for the most limiting Watts Bar fuel and found it acceptable. Staff closed issue in SSER2. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4 . 2 . 3	13	OT	CONFIRMATORY ISSUE - identify margins and to offset reduction in DNBR due to fuel rod bowing and incorporating residual bow penalty into the Technical Specifications. In SSER2, the staff concluded TVA had an acceptable means of analyzing the effects of fuel rod bowing and determining any residual rod bowing penalties on the departure from nucleate boiling ratio and total peaking power. Staff closed the issue in SSER2. In SSER10, NRC reviewed design loading conditions for the reactor vessel internals and raised an issue on the seismic analysis of the control rod drive mechanisms (CRDMs). TVA's letter dated June 15, 1993, for both units discussed CRDM seismic operability. In SSER13, the NRC documented that concerns related to CRDM seismic qualification had been resolved. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4 . 2 . 4	0	C	Approved for both units in SER.
4 . 2 . 5	0	OT	"FUEL DESIGN CONCLUSIONS" left open until all items in subsection are closed. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4 . 3 . 0	0	C	Approved for both units in SER.
4 . 3 . 1	13	OT	In SSER13, NRC reviewed the V5H fuel design and found use of V5H fuel acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
4.3 .2	15	OT	In SSER13, NRC reviewed the V5H fuel design and found use of V5H fuel acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle. ---------- In SSER15, NRC reviewed TVA's proposed changes to the FSAR from a reanalysis of Pressurized Thermal Shock. The analysis was subsequently incorporated into the FSAR.
4.3 .3	13	OT	In SSER13, NRC reviewed the V5H fuel design and found use of V5H fuel acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4.3 .4	13	OT	In SSER13, NRC reviewed the V5H fuel design and found use of V5H fuel acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4.4 .0	0	C	Approved for both units in SER.
4.4 .1	0	C	Approved for both units in SER.
4.4 .2	12	OT	In SSER12, NRC evaluated a change in reactor coolant flow (upflow) for both units. NRC concluded in a July 28, 1993 letter for both units that the proposed upflow modification was acceptable. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4.4 .3	16	OT	OUTSTANDING ISSUE concerning removal of RTD bypass system This outstanding issue was opened in SSER6. Staff issued an SER dated June 13, 1989, for Unit 1 only that approved replacement of the RTD bypass system with an Eagle-21 microprocessor system for monitoring reactor coolant temperature. NRC provided their initial assessment of the RTD bypass removal for WBN Unit 1 in SSER8. This SER was reproduced in SSER8, Appendix R. In SSER16, NRC reviewed the flow measurement uncertainty value for the reactor coolant system. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review. ---------- In SSER12, NRC evaluated a change in reactor coolant flow (upflow) for both units. NRC concluded that the proposed upflow modification was acceptable. ---------- In SSER13, NRC reviewed thermal hydraulic methodologies and concluded that the V5H thermal-hydraulic design was acceptable for Watts Bar. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
4.4.4	13	OT	In SSER13, NRC reviewed TVA's responses to a request for additional information concerning fuel rod bowing and crud buildup for WBN Unit 1. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
4.4.5	16	O	CONFIRMATORY ISSUE / LICENSE CONDITION on review of Loose Parts Monitoring System (LPMS) startup report and inclusion of limiting conditions for LPMS in Technical Specifications TVA letters dated February 25, 1982, and November 10, 1982, provided a description of operator training and an evaluation of conformance to RG 1.133. In SSER3, the staff closed the confirmatory issue and opened a license condition to track submittal of the startup test results and the alert level setting. In SSER5, the staff closed the LICENSE CONDITION to a TVA commitment to provide the startup test results and the alert level settings made in a letter dated September 19, 1990, for both units. In SSER16, NRC reviewed additional information and revised commitments associated with the LPMS. For Unit 2 due to obsolescence, TVA will replace the LPMS. Unit 2 Action: Provide the startup test results and the alert level settings.
4.4.6	0	C	Approved for both units in SER.
4.4.7	0	CT	"Technical Resolution of Generic Issue B-59-(N-1) Loop Operation in BWRs and PWRs – N-1 Loop operation was addressed in original 1982 SER (4.4.7). Unit 2 Action: Confirm Technical Specifications prohibit (N-1) Loop Operation.
4.4.8	10	O	LICENSE CONDITION - Detectors for Inadequate core cooling (II.F.2) GL 82-28 / NUREG-0737, II.F.2, "Inadequate Core Cooling Instrumentation System" – In the original SER, the review of the ICC instrumentation was incomplete. The January 24, 1992, letter superseded the previous responses on this issue. TVA letter for Units 1 and 2 dated January 24, 1992, committed to install Westinghouse ICCM-86 and associated hardware. NRC completed the review for Units 1 and 2 in SSER10. For Unit 2 due to obsolescence of the ICCM-86 system, TVA intends to install the Westinghouse Common Q Post-Accident Monitoring System. Unit 2 Action: Install Westinghouse Common Q PAM system.
4.4.9	0	O	"CONCLUSION" left open until all items in subsection are closed.
4.5.0	0	C	Approved for both units in SER.
4.5.1	0	C	Approved for both units in SER.
4.5.2	0	C	Approved for both units in SER.
4.6.0	0	C	Approved for both units in SER.
5.0.0	0	C	Approved for both units in SER.
5.1.0	6	O	The staff stated that the Eagle 21 microprocessor system was an acceptable replacement of the resistance temperature detector (RTD) bypass system for monitoring reactor cooling temperature in SSER5. In SSER6, the staff noted that TVA had incorporated the information for this new design into the FSAR and said they would track results of the review of this design change as an outstanding issue - Removal of RTD Bypass System (See 4.4.3). Unit 2 Action: Provide additional information for NRC review per 7.2.1

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
5.2.0	0	C	Approved for both units in SER.
5.2.1	0	C	Approved for both units in SER.
5.2.2	15	C	OUTSTANDING ISSUE on staff review of sensitivity study of required safety valve flow rate versus trip parameter TVA letter dated April 18, 1983, provided the safety valve sizing information and information on differences with the reference plant. Staff closed issue in SSER2. ---------- In SSER15, the staff stated that subject to resolution of NUREG-737 Items II.D.1 (performance testing of relief and safety valves) and II.D.3 (indication of relief and safety valve position), overpressure protection at hot operating conditions will comply with the guidelines of SRP 5.2.2 and requirements of GDC 15. They noted that these items were found to be acceptable.
5.2.3	0	C	Approved for both units in SER.
5.2.4	16	O	LICENSE CONDITION – Inservice inspection (ISI) program The ISI program is required to be submitted within 6 months of the date of issuance of the operating license. The applicable ASME Code edition and addenda are determined by reference to 50.55a(b) 12 months preceding the date of issuance of the OL. The staff reiterated this in SSER10. In SSER12, the LICENSE CONDITION was resolved by a TVA commitment to submit the program within six months after receiving the operating license. Unit 2 action: Submit Unit 2 ISI program. ---------- OUTSTANDING ISSUE - Unit 2 PSI program submitted April 30, 1990, with a partial listing of relief requests. This item tracked the staff review. In the SER, the preservice inspection program was still under review. NRC reviewed the Unit 1 PSI program in SSERs 10, 12, and 16. Unit 2 Action: Submit Unit 2 PSI program.
5.2.5	12	C	In SSER9, the staff stated that since the UHI system has been eliminated from the WB design , the previous discussion of this system in the SER no longer applies, but the conclusions reached in the SER were still valid. In SSER11, the staff reviewed valve stem leakage and stated that the staff's prior conclusions about valve stem leakage were not affected. In SSER12, the staff retracted the requirement identified in the SER that if leakage is alarmed and confirmed in a flow path with no indicators, then the Technical Specifications require a water inventory material balance be initiated within one hour. The staff also provided a clarification of SER wording related to detection of intersystem leakage through check valves and stated that this did not change prior staff conclusions and the reactor coolant pressure boundary system remains acceptable.
5.2.6	16	C	In SSER16, the staff reviewed the analysis of the RPV and internal components and found the use of the WECAN computer code acceptable.
5.3.0	0	C	Approved for both units in SER.
5.3.1	14	C	The staff reviewed TVA's submittal on reactor vessel irradiation in SSER11 and stated that the WB reactor vessels acceptably satisfy the requirements of 10 CFR 50.61. In SSER14, the staff determined that TVA complied with all the requirements in the current Appendix G, 10 CFR Part 50 without exemptions and the previously approved exemptions were no longer needed.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
5.3.2	16	OT	OUTSTANDING ISSUE - P-T limits for Unit 2 not provided. Staff will review as part of Unit 2 Technical Specifications. In the original 1982 SER, NRC indicated that the review of the Unit 2 P-T limits would be completed as part of the review of the Unit 2 Technical Specifications. In SSER16, the staff found the pressure temperature limits methodology and the pressure temperature limits report for Unit 1 acceptable. Unit 2 action: Submit P-T limits.
5.3.3	0	OT	OUTSTANDING ISSUE for staff to complete evaluation of Unit 2 after receipt of P-T limits In the original 1982 SER, NRC indicated that the review of the Unit 2 P-T limits would be completed as part of the review of the Unit 2 Technical Specifications. Unit 2 action: Submit P-T limits.
5.4.0	0	C	Approved for both units in SER.
5.4.1	0	C	Approved for both units in SER.
5.4.2	4	C	5.4.2.2: OUTSTANDING ISSUE for staff to evaluate TVA's proposed resolution to concerns about flow induced vibrations in Model D-3 SGs pre-heat region In the original 1982 SER, the staff concluded that because of the generic problem of tube degradation caused by flow induced vibration in Westinghouse model D steam generators, operation would be limited to 50%. In SSER1, the staff continued to monitor activities associated with proposed modifications to the pre-heater region of the SGs to reduce impingement of water on tubes in this area and eliminate the vibration responsible for wear of the SG tubes. TVA's May 27, 1983, letter committed to implement the NUREG-0966 modifications to address this. In SSER4, the staff concluded the modification was acceptable to operate at 100%. In a letter dated December 17, 2008, TVA confirmed that these modifications were performed for WBN Unit 2.
5.4.3	11	CI	CONFIRMATORY ISSUE to verify installation of an RHR flow alarm and proper function of dump valves when actuated manually In the SER, staff accepted TVA's commitment to provide, before startup, an RHR flow alarm to alert the operator to initiate alternate cooling modes in the event of loss of RHR pump suction. SSER2 resolved testing of dump valves. The staff verified that the alarm had been installed in SSER5, resolving the confirmatory issue. Unit 2 action: Verify alarm installation. ---------- CONFIRMATORY ISSUE involving natural circulation test to demonstrate ability to cool down and depressurize the plant, and that boron mixing is sufficient under such circumstances; or, if necessary, other applicable tests before startup after first refueling Branch Technical Position requires a natural circulation test with supporting analysis to demonstrate the ability to cool down and depressurize the plant and that boron mixing is sufficient. Comparison with performance of previously tested plants of similar design is acceptable, if justified. July 11, 1991, TVA letter, for both units, provided an assessment of the acceptability of the Diablo Canyon natural circulation tests to WBN. In SSER10, the NRC found the methods and conclusions acceptable. The staff corrected the wording in SSER10 in SSER11 and stated that this did not alter the conclusion reached.
5.4.4	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
5.4.5	12	CI	LICENSE CONDITION - NUREG-0737, II.B.1, "Reactor Coolant System Vents" - In the original SER, the NRC found TVA's commitment to install reactor coolant vents acceptable pending verification. In SSER2, the staff found venting guidelines acceptable. Installation was completed for Unit 1 only in SSER5 (IR 390/84-37) and the staff stated that the LC was no longer necessary. In SSER12, the staff included the safety evaluation for the RCSV system. The staff concluded that the high point vent system was acceptable subject to satisfactory completion of seven items that were described as on-going or planned activities associated with completion of the WB licensing process. They stated that none required additional review with respect to the SER nor would they change the SER, provided they were satisfactorily completed. TVA was asked to submit a letter prior to receipt of an OL stating how and when these items were completed. The staff stated that when these items were satisfactorily implemented, the RCSV system would be acceptable. Unit 2 Action: Verify installation of reactor coolant vents.
6.0.0	0	C	Approved for both units in SER.
6.1.0	0	C	Approved for both units in SER.
6.1.1	0	C	Approved for both units in SER.
6.1.2	0	C	Approved for both units in SER.
6.1.3	0	C	Approved for both units in SER.
6.2.0	0	C	Approved for both units in SER.
6.2.1	15	CT	6.2.1.1: CONFIRMATORY ISSUE involves reviewing analysis that ensures that containment external pressure will not exceed design value of 2.0 psi In the original 1982 SER, NRC indicated it would confirm the contention that containment external pressure transients could not exceed the design value of 2.0 psig. TVA submitted the information June 4, 1982. In SSER3, NRC concluded that the design provided adequate protection against damage from external pressure transients. ---------- In SSER5, the staff reviewed a revised long term containment analysis for the design basis LOCA in support of a proposed reduction in the limit for minimum allowable weight of ice in the condenser and found it acceptable. Additionally, the staff verified that containment pressure and water level monitors were installed in Unit 1. Thus, License Conditions 6d and 6e were resolved (these are discussed with the other NUREG-0737 issues). In SSER7, the staff resolved their concerns regarding local temperatures near MSLBs inside containment and their impact on equipment qualification. In SSER12, the staff reviewed TVA's basis for deleting requirements for a 20,000 ppm boron concentration in the boron injection tank and determined that this would not significantly affect the environmental response of the containment or the safe shutdown equipment therein. In SSER14, the staff reviewed revisions to a number of containment design parameters and concluded that none affect conclusions reached in the SER or supplements. In SSER15, the staff reviewed the containment barrier seals and associated surveillance requirements and concluded that a revised divider barrier seal surveillance program was appropriate for Unit 1. Unit 2 Action: Review Unit 2 Technical Specifications with respect to divider barrier seal surveillance program.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
6.2.2	7	C	In SSER7, the staff determined that hot standby was an acceptable mode following a main steamline break and the containment cooling system modifications were acceptable.
6.2.3	16	C	In SSER16, the staff reviewed Amendment 89 to the FSAR and deletion of the high-radiation signal from the auxiliary building exhaust vent monitors and found it acceptable.
6.2.4	12	CT	CONFIRMATORY ISSUE to install safety grade isolation valves on 1" chemical feed lines joining feedwater lines to main steam line. LICENSE CONDITION – Modification of chemical feedlines In the original 1982 SER, the containment isolation provisions for the main and auxiliary feedwater lines, feedwater bypass lines and the chemical feedlines to the steam generators did not meet GDC 57. This was resolved by FSAR Amendment 55. In SSER5, the NRC concluded that the containment isolation provisions for the main and auxiliary feedwater lines, feedwater bypass lines and the chemical feedlines were acceptable. ---------- OUTSTANDING ISSUE for NRC to complete review of information provided by TVA to address Containment Purging During Normal Plant Operation LICENSE CONDITION - Containment isolation dependability In the original 1982 SER, NRC concluded that WBN met all the requirements of NUREG-0737, item II.E.4.2 except subsection (6) concerning containment purging during normal operation. In SSER3, the outstanding issue was closed and the LICENSE CONDITION was left open. NRC completed the review and issued a TER for both units on July 12, 1990. NRC concluded that the isolation valves can close against the buildup of pressure in the event of a design basis accident if the lower containment isolation valves are physically blocked to an opening angle of 50 degrees or less. (SSER5) Unit 2 Action: Reflect valve opening restriction in the Technical Specifications. ---------- OUTSTANDING ISSUE involving containment isolation using closed systems This outstanding issue was opened in SSER7. In SSER12, the NRC concluded that the systems in question were "closed loops outside containment" and reaffirmed the previous conclusion of acceptability.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
6.2 .5	8	O	OUTSTANDING ISSUE for review of TVA provided additional information relative to discussion added to FSAR to address analysis of the production and accumulation of hydrogen within containment following onset of a LOCA In the original 1982 SER, NRC indicated that additional information was required concerning the analysis of the production and accumulation of hydrogen within the containment during a design basis LOCA. This information was provided in FSAR amendments and evaluated by NRC in SSER4. In SSER4, the NRC concluded that the design of the combustible gas control system was acceptable and the outstanding issue closed. Unit 2 Action - The hydrogen recombiners will be removed from the Unit 2 design and licensing basis based on 10 CFR 50.44 (final rule September 16, 2003) and abandoned in place. This portion has a status of Open. ---------- LICENSE CONDITION – (6f) Accident monitoring instrumentation II.F.1 – containment hydrogen In SSER5, NRC closed the LICENSE CONDITION for Unit 1 only (IR 390/84-85). Unit 2 Action: Verify installation of containment hydrogen accident monitoring instrumentation. This portion has a status of Closed/Implementation only per NRC May 28, 2008, letter. ---------- LICENSE CONDITION – (9) Hydrogen control measures In the original 1982 SER, an LC was raised to track resolution of Unresolved Safety Issue A-48, "Hydrogen Control Measures and Effects of Hydrogen Burns on Safety Equipment." In SSER8, the NRC reviewed the hydrogen mitigation system (igniters) and concluded it met the requirements of the final rule {10 CFR 50.44(c)(3)}.
6.2 .6	19	C	In SSER4, the staff approved exemption from certain requirements of Appendix J to 10 CFR 50 for both units. In SSER19, the staff found a revised schedule for the exemption approved in SSER4 acceptable. In SSER5, the staff found there was no radiological consequence to an increase in the bypass leakage rate for the emerging gas treatment system and found the increase acceptable.
6.2 .7	4	C	CONFIRMATORY ISSUE for TVA to confirm that the lowest temperatures which will be experienced by the limiting materials of the reactor containment pressure boundary under the conditions cited by GDC 51 will be in compliance with the temperatures identified in the staff's analysis of fracture toughness requirements for load bearing component of the containment system In SSER4, NRC reviewed the confirmatory information submitted and concluded for both units that the reactor containment pressure boundary materials will behave in a non-brittle manner and the requirements of GDC 51 were satisfied. NRC provided the technical basis in Appendix H of SSER4.
6.3 .0	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
6.3 .1	11	OT	OUTSTANDING ISSUE - involving removal of upper head injection system The Upper Head Injection (UHI) system design was approved in the original 1982 SER. TVA letter dated September 19, 1985, informed NRC that UHI would not be installed on Unit 2. The staff stated in SSER6 that they were continuing to review TVA's submittal. In SSER7, NRC concluded it was acceptable to delete UHI from both units. In SSER11, the staff stated that the revision of the design code for ECCS piping from B31.1 to ASME Section III did not change the conclusions made in the SER and previous SSERs. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the Initial cycle.
6.3 .2	5	OT	In SSER5, the staff reviewed TVA's approach to maintaining ECCS effectiveness by ensuring that no single failure would be able to energize the coils of the valve operators and found it acceptable. The staff also reviewed TVA's response to Issue 4 of NUREG-0138, Resequencing of ECCS loads following SI signal reset followed by a loss of offsite power. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
6.3 .3	9	OT	OUTSTANDING ISSUE - involving containment sump screen design In the original 1982 SER, the staff approved the proposed sump design in the FSAR. A deviation between the installed and proposed design was discovered during an NRC inspection. In SSER9, the staff concluded that the as-installed sump screen was acceptable. ---------- CONFIRMATORY ISSUE - provide a detailed survey of insulation material that could be debris post-LOCA In the original 1982 SER, NRC found the design of the containment sump against debris acceptable subject to the acceptability of a detailed survey of insulation materials. In SSER2, the NRC review of the survey confirmed the staff's initial conclusion that the design to provide protection against sump debris was acceptable. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
6.3 .4	0	C	Approved for both units in SER.
6.3 .5	0	O	Closure based on 6.3.1 to 6.3.3.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
6.4 .0	18	C	In SSER5, the staff concluded that removal of the main control room air intake chlorine detector was acceptable. In SSER11, they stated that FSAR Amendment 69 on control room isolation did not change previous conclusions. In SSER16, the staff concluded that the control room design satisfied the requirements of GDC 19 and the guidelines of NUREG-0737, Item III.D.3.4. In SSER18, the staff reviewed updated control room air flow rate data and dose analysis, as provided in Amendment 90, and determined that the changes did not affect conclusions reached in the SER or its supplements. See 18.1.0 also.
6.5 .0	0	C	Approved for both units in SER.
6.5 .1	5	C	In SSER5, the staff found the Reactor Building Purge Ventilation System acceptable.
6.5 .2	0	C	Approved for both units in SER.
6.5 .3	0	C	Approved for both units in SER.
6.5 .4	0	C	Approved for both units in SER.
6.6 .0	15	O	OUTSTANDING ISSUE on additional information required on preservice inspection program and identification of plant specific areas where ASME Code Section XI requirements cannot be met and supporting technical justification NRC reviewed the preservice inspection program (PSI) for Unit 1 only in SSER10 and on the basis of a TVA commitment to submit an inservice inspection program within 6 months after receiving an operating license, considered a proposed LC for an ISI no longer required. In SSER15, the staff reviewed Revisions 24 and 25 to the preservice inspection program and concluded that the changes included therein were acceptable. Unit 2 action: Submit Unit 2 PSI program.
7.0 .0	0	C	Approved for both units in SER.
7.1 .0	0	C	Approved for both units in SER.
7.1 .1	16	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review. ---------- By letter dated August 21, 1995 for both units, TVA provided additional justification for a deviation from Position C.6(a) of RG 1.118 "Periodic Testing of Electrical Power and Protection Systems" Revision 2. In SSER16, the NRC found the deviation acceptable.
7.1 .2	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
7.1 .3	15	OT	In the SER, NRC indicated that a review of the setpoint methodology would be performed with a review of the Technical Specifications. In SSER4, NRC reviewed the methodology used to determine setpoints for Watts Bar Units 1 and 2 and determined that it was acceptable. By letter dated July 29, 1994, for both units, TVA submitted a topical report titled "Westinghouse Setpoint Methodology for Protection Systems, Watts Bar Units 1 and 2, Eagle 21 Version" (WCAP-12096, Revision 6). In SSER15, the NRC concluded the setpoint methodology was acceptable based on (1) previous acceptance of Westinghouse setpoint methodology at other plants, (2) the similarity between the Watts Bar and previously approved designs such as Sequoyah, and (3) the Watts Bar setpoint methodology is in compliance with RG 1.105 and ISA S6704. Staff requested discussion of methodology for determining, setting, and evaluating as-found setpoints for drift susceptible instruments. Unit 2 action: Resolve this issue using the BFN TS-453 precedent (see NRC ML061680008).
7.2 .0	0	C	Approved for both units in SER.
7.2 .1	15	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. In SSER15, the NRC reviewed the WBN Unit 1 EMI/RFI report and concluded that the EMI/RFI issue was resolved for WBN Unit 1. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review.
7.2 .2	0	C	Approved for both units in SER.
7.2 .3	0	C	Approved for both units in SER.
7.2 .4	0	C	Approved for both units in SER.
7.2 .5	14	CI	CONFIRMATORY ISSUE - address IEB 79-21 to alleviate temperature dependence problem associated with measuring SG water level In SSER2, NRC accepted TVA's commitment to insulate the steam generator water level reference legs to alleviate the temperature dependence problem. By letter dated July 27, 1994, TVA submitted an evaluation for both units and determined that it was not necessary to insulate the SG reference legs at WBN. In SSER14, NRC concurred with TVA's assessment to not insulate the steam generator water level instrument reference leg. Unit 2 Action: Update accident calculation.
7.2 .6	13	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review. "CONCLUSIONS" left open until all actions in subsection are closed.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
7.3 .0	13	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review.
7.3 .1	14	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review. ---------- In SSER14, NRC reviewed TVA's FSAR amendment 81 section 7.3.2.2.6, with respect to a deviation from IEEE Standard 279-1971. Manual initiation of both steamline isolation and switchover from injection to recirculation following a loss-of-primary-coolant accident are performed at the component level only. In SSER14, NRC agreed with TVA's justification.
7.3 .2	2	C	CONFIRMATORY ISSUE is commitment to make a design change to provide protection that prevents debris from entering containment sump level sensors In the original SER, staff identified a concern that debris in the containment sump could block the inlets to the differential pressure transmitters and result in a loss of the permissive signal to the initiation logic for the automatic switchover from the injection to the recirculation mode of the emergency core cooling system. In a September 15, 1983, letter TVA notified NRC that the level sensors had been moved from inside the sump wall to outside the sump wall with the sense line opening protected by a cap with small holes. Staff closed the issue in SSER2.
7.3 .3	0	C	Approved for both units in SER.
7.3 .4	0	C	Approved for both units in SER.
7.3 .5	3	CI	CONFIRMATORY ISSUE - perform confirmatory tests to satisfy IEB 80-06 (to ensure that no device will change position solely due to reset action) and staff review of electrical schematics for modifications that ensure that valves remain in emergency mode after ESF reset In the original SER, staff concluded that the design modifications for Bulletin 80-06 were acceptable subject to review of the electrical schematics that were not available at the time. In SSER3, the staff found the modifications acceptable and closed the confirmatory issue. Unit 2 Action: Perform verification during preoperational testing.
7.3 .6	13	O	In SSER13, NRC reviewed the Eagle-21 upgrade for WBN Unit 1 only. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review. "CONCLUSIONS" left open until all actions in subsection are closed.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
7.4 .0	0	C	Approved for both units in SER.
7.4 .1	0	C	Approved for both units in SER.
7.4 .2	7	C	By letter dated September 26, 1985, TVA requested a deviation from 10 CFR Part 50, Appendix R, Section III.L.2.d for use of the SG saturation temperatures to approximate reactor coolant system cold leg temperatures. This was approved for both units by SE dated May 17, 1991. The SE was discussed in SSER7. The staff concluded that this was an acceptable deviation.
7.4 .3	0	C	Approved for both units in SER.
7.5 .0	0	C	Approved for both units in SER.
7.5 .1	0	C	Approved for both units in SER.
7.5 .2	15	CI	OUTSTANDING ISSUE involving RG 1.97 instruments following course of an accident In the original 1982 SER, the staff stated that WBN did not use RG 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plants and Environs Conditions During and Following an Accident," for the design because the design predated the RG. In SSER7, an outstanding issue was opened. TVA provided NRC information on exceptions to RG 1.97. A detailed review was performed for both units (Appendix V of SSER9). The staff concluded that WBN conforms to or has adequately justified deviations from the guidance of RG 1.97, Revision 2. TVA submitted additional deviations for both units in letters dated May 9, 1994, and April 21, 1995. In SSER14 and SSER15, the additional deviations to RG 1.97 were reviewed and accepted by NRC. NUREG-0737, II.F.1.2, ""Accident Monitoring Instrumentation" – Reviewed in SSER9. Unit 2 Actions: Install Noble gas, Iodine / particulate sampling, and Containment High Range Monitors. CI in NRC letter May 28, 2008.
7.5 .3	0	CI	B 79-27, "Loss of Non-class 1E I&C Power System Bus During Operation" – TVA responded to the Bulletin on March 1, 1982. Reviewed in 7.5.3 of the original 1982 SER. Unit 2 Action: Issue appropriate emergency procedures.
7.5 .4	0	CI	"CONCLUSIONS" left CI until all items in subsection are closed.
7.6 .0	0	C	Approved for both units in SER.
7.6 .1	0	C	Approved for both units in SER.
7.6 .2	0	C	Approved for both units in SER.
7.6 .3	0	C	Approved for both units in SER.
7.6 .4	0	C	Approved for both units in SER.
7.6 .5	4	C	CONFIRMATORY ISSUE - install switches on the main control board for the operator to manually arm this system (overpressure protection provided by pressurizer PORVs) In the original 1982 SER, the staff found the design of the overpressure protection during low temperature features acceptable pending review of the drawings and FSAR description. In SSER4, the staff documented completion of the review and closed the confirmatory issue.
7.6 .6	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
7.6.7	0	C	Approved for both units in SER.
7.6.8	0	C	Approved for both units in SER.
7.6.9	4	C	Approved for both units SER subject to completion of Confirmatory Issue in 7.6.5.
7.7.0	0	C	Approved for both units in SER.
7.7.1	0	C	Approved for both units in SER.
7.7.2	13	C	LICENSE CONDITION – Status monitoring system, Bypassed and Inoperable Status Indication (BISI) In the original 1982 SER, the staff requested TVA address RG 1.47, "Bypassed and Inoperable Status Indications for Nuclear Power Plant Safety Systems." TVA addressed RG 1.47 by letters for both units dated January 29, 1987, and October 22, 1990. In SSER7, the staff documented completion of the review and closed the issue. By letter dated February 18, 1994, for both units, TVA submitted a re-evaluation of BISI that excluded components that would not be rendered inoperable more than once a year in accordance with RG 1.47 position C.3(b). In SSER13, NRC reviewed the revision and concluded that it was acceptable.
7.7.3	0	C	Approved for both units in SER.
7.7.4	0	C	Approved for both units in SER.
7.7.5	0	C	Approved for both units in SER.
7.7.6	0	C	Approved for both units in SER.
7.7.7	0	C	Approved for both units in SER.
7.7.8	14	CT	ATWS Mitigation design was reviewed and approved for both units by a Safety Evaluation Report issued December 28, 1989. This SER is also in Appendix W of SSER9. Outstanding Issue was Technical Specifications requirements. In SSER14, NRC reviewed the revision of FSAR Figure 7.3-3 for the AMSAC automatic initiation signal to start the turbine driven and motor driven auxiliary feedwater pumps and considered the issue resolved. Unit 2 Action: Address in Technical Specifications as appropriate.
7.8.0	0	C	Approved for both units in SER.
7.8.1	14	CI	NUREG-0737, II.D.3, "Valve Position Indication" – The design was reviewed in the original 1982 SER and found acceptable pending confirmation of installation of the acoustic monitoring system. In SSER5 (IR 390/84-35), the staff closed the LICENSE CONDITION for Unit 1 only. By letter dated November 7, 1994, for both units, TVA provided a revised response for NUREG-0737 Item II.D.3. TVA revised the design by relocating the accelerometers for valve position indication to downstream of the relief valves. This change was reviewed in SSER14. The revision did not change the function of the position indication hardware and did not alter the previous review. Unit 2 Action: Verify installation of the acoustic monitoring system to PORV to indicate position. CI in NRC May 28, 2008 letter.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
7.8.2	0	CI	NUREG-0737, II.E.1.2, "Auxiliary Feedwater System Initiation and Flow Indication" Unit 2 Action: Complete procedures and qualification testing.
7.8.3	0	CI	NUREG-0737, II.K.3.9, "Proportional Integral Derivative Controller Modification" – Reviewed in original 1982 SER. Unit 2 Action: Set the derivative time constant to zero.
7.8.4	4	CT	NUREG-0737, II.K.3.10, "Anticipatory Trip At High Power" In SSER4, NRC concluded that TVA had adequately addressed the requirements of NUREG-0737 Item II.K.3.10 for removal of the anticipatory reactor trip on turbine trip at or below 50% power. Unit 2 Action: Unit 2 Technical Specifications and surveillance procedures will address this issue.
7.8.5	0	C	NUREG-0737, II.K.3.12, "Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip" Approved for both units in the SER
7.9.0		NA	Area not addressed in 1981 Standard Review Plan.
8.0.0	0	C	Approved for both units in SER.
8.1.0	0	C	Approved for both units in SER.
8.2.0	0	C	Approved for both units in SER.
8.2.1	13	C	Approved for both units in SER. In SSER13, NRC reviewed TVA's analysis of grid stability on loss of both units. The NRC conclusions in the SER remained valid.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
8.2 .2	15	C	8.2.2.1 CONFIRMATORY ISSUE - document additional information in FSAR on control power supplies and distribution system for the Watts Bar Hydro Plant Switchyard In the original 1982 SER, NRC concluded that the offsite power system circuits at the Watts Bar Hydro Plant Switchyard met GDC 17 pending documentation in the FSAR. The information was added to the FSAR. In SSER2, NRC closed the issue. In SSER13, the staff reviewed revised information incorporated into FSAR amendment 71 for both units and concluded that it supported the original conclusion in SSER2. ---------- 8.2.2.2 OUTSTANDING ISSUE involving compliance of design changes to the offsite power system with GDC 17 and 18. In SSER2 and 3, NRC continued the review of the offsite electrical power system. By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed the design changes to minimize the probability of losing all AC power, compliance with GDC 17 and minimizing the probability of a two unit trip following a one unit trip. These issues were resolved in SSER13. Additional review was done in SSER14, but the conclusions remained valid. ---------- 8.2.2.3 Compliance with GDC 17 for the Duration of the Offsite System Contingencies By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC reviewed the load shed scheme described in FSAR amendment 71 that reduces loads from common station service transformers A and B including contingency for both units trip and a 161-kV supply contingency. In SSER15, NRC determined that entering the LCO for one offsite circuit inoperable was appropriate. No open items were identified. ---------- 8.2.2.4 Minimizing the Probability of a Two-Unit Trip Following a One-Unit Trip By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In FSAR amendment 71, TVA described the transfer of power sources on trip of a unit's main generator. In SSER 13, NRC evaluated the design and determined that the concern was resolved.
8.2 .3	0	C	Approved for both units in SER.
8.2 .4	0	C	Approved for both units in SER.
8.3 .0	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
8.3 .1	20	OT	8.3 Fifth Diesel Generator In SSER10, NRC reviewed the design of the fifth diesel generator. In SSER18, NRC accepted TVA's commitment to perform modifications and surveillances including preoperational testing before declaring the fifth diesel generator operable as a replacement for one of the four diesel generators. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service. ---------- 8.3.1.1: CONFIRMATORY ISSUE - incorporate new design that provides dedicated transformer for each preferred offsite circuit in FSAR In the original 1982 SER, NRC concluded that the offsite power system with a dedicated transformer for each preferred offsite circuit met GDC 17 pending documentation in the FSAR. The information was added to the FSAR. In SSER2, NRC closed the issue. In SSER13, NRC reviewed additional changes though FSAR amendment 75 and concluded that the design was acceptable. ---------- 8.3.1 DG Starting and Control Circuit Logic In SSER10, NRC reviewed the DG starting and control circuit logic. No open items were identified. ---------- 8.3.1.2 Low and Degraded Grid Voltage Condition In the SER, NRC stated they would verify the adequacy of TVA's analysis regarding Branch Technical Position PSB-1 once preoperational testing was completed. In SSER13, the NRC reviewed information on the load shed and diesel start relays. In SSER14 NRC clarified the requirements. In SSER20, NRC reviewed the preoperational test for Unit 1. Unit 2 Action: Include the setpoint in the Technical Specifications for the load shed relays and similar minimum limits for the diesel start relays. ---------- 8.3.1.6: CONFIRMATORY ISSUE - provide diesel generator reliability qualification test report In SSER2, NRC indicated that it would verify DG qualification testing. TVA provided a copy of the DG qualification test report. In SSER7, the NRC concluded that the DGs had been satisfactorily tested in accordance with IEEE 387-1977. ---------- 8.3.1.6: LICENSE CONDITION (12) - Diesel generator reliability qualification testing at normal operating temperature In the original 1982 SER, NRC required that the capability of the DGs to start at normal temperature be demonstrated. TVA's August 31, 1983, letter confirmed tests had been performed on a DG identical to those at WBN. In SSER2, NRC closed the issue. ---------- 8.3.1.7 Possible Interconnection Between Redundant Divisions Through Normal and Alternate Power to the Battery Charger By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed the use of alternate feeders to the battery chargers and inverters and concluded a Technical Specification surveillance for monitoring the position of these supply breakers resolved the item.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
			Unit 2 Action: Include the surveillance requirement in the Technical Specifications. ---------- 8.3.1.10 No-load Operation of the Diesel Generator By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed the information provided and concluded the issue was resolved. In SSER14, NRC added additional clarification but did not change the conclusions. ---------- 8.3.1.11 Test and Inspection of the Vital Power System By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed TVA's plan for test and inspection of the vital ac system and concluded the issue was resolved. ---------- 8.3.1.12 The Capability and Independence of Offsite and Onsite Sources When Paralleling During Testing By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed the Emergency Diesel Generators response to a loss-of-offsite-power (LOOP). TVA submitted additional information for both units by letters dated February 7, 1994 and June 29, 1994. In SSER14, NRC concluded that the issue was resolved. ---------- 8.3.1.13 Use of an Idle Start Switch for Diesel Generators By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, the NRC reviewed the information presented on the local idle start switch and concluded the issue was resolved. ---------- 8.3.1.14 Master Fuse List Program In SSER9, NRC provided a safety evaluation of the Master Fuse List Special Program (SP) for Unit 1 (Appendix U). In SSER 13, NRC referenced the evaluation. Unit 2 Action: Resolve the SP for WBN Unit 2 with the Unit 1 approach.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
8 . 3 . 2	14	C	8.3.2.2: LICENSE CONDITION – DC monitoring and annunciation system In SSER3, the staff determined that some items were omitted from the design of the DG DC monitoring and annunciation system. By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC closed the issue. ---------- 8.3.2.4: CONFIRMATORY ISSUE - include diesel generator design analysis in FSAR In the original 1982 SER, staff indicated the design analysis for demonstrating compliance of the DGs with regulatory requirements and guidelines was acceptable pending incorporation of the analysis in the FSAR. The analysis was incorporated in the FSAR, and the issue closed in SSER2. By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC indicated that the issue was resolved. ---------- 8.3.2.5 Non-safety Loads Powered from the DC Distribution System and Vital Inverters By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC indicated that the issue was resolved. ---------- 8.3.2.5.1 Transfer of Loads Between Power Supplies Associated with the Same Load Group but Different Units By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC reviewed the information provided. Additional information was requested for both units by letter dated March 28, 1994. TVA responded for both units by letter dated June 29, 1994. In SSER14, NRC indicated that the issue was resolved. ---------- 8.3.2.7 The Fifth Vital Battery System By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC indicated that the issue was resolved. ---------- 8.3.2.8 Reenergizing the Battery Charger from the Onsite Power Sources Versus Automatically Immediately Following a Loss of Offsite Power By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC indicated that the issue was resolved.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
8 . 3 . 3	16	CT	8.3.3.1.1: CONFIRMATORY ISSUE involving submergence of electrical equipment as result of a LOCA In the original 1982 SER and SSER3, staff stated that the design for the automatic deenergizing of loads as a result of a LOCA would be verified as part of the site visit. During the August 1991, visit and in a letter for both units dated September 13, 1991, TVA committed to revise the FSAR. The information was added to the FSAR in amendment 71. In SSER13, NRC closed the issue. ---------- 8.3.3.1.3 Failure Analysis of Circuits Associated with Cables and Cable Splices Unqualified for Submergence By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER 13, NRC reviewed the submergence calculation and closed the issue. Unit 2 Action: Revise calculation for WBN Unit 2. ---------- 8.3.3.1.2: CONFIRMATORY ISSUE - verify design for bypass of thermal overload protective device In the original 1982 SER, NRC indicated that the design for bypass of thermal overload protective devices on safety-related motor operated valves would be verified during the electrical drawing review. The staff subsequently reviewed the drawings and closed the issue in SSER2. ---------- 8.3.3.1.4 Use of Waterproof Splices in Potentially Submersible Sections of Underground Duct Runs By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13 and 14, NRC raised a concern on splice usage in raceways. TVA submitted additional information for both units by letters dated November 18, 1994, and January 5, 1995. In SSER15, NRC found that TVA had adequately justified the acceptability of the installed splices at Watts Bar. ---------- 8.3.3.1.5 Dow Corning RTV-3140 Used to Repair Damaged Kapton Insulated Conductors In SSER15, NRC reviewed the use of RTV-3140. TVA submitted the technical basis for use in a December 6, 1994, letter for both units. TVA completed additional testing and told the NRC of the limited use of this repair method for both units by letter dated February 10, 1995. In SSER15, NRC found the use of RTV-3140 acceptable for the limited use described. ---------- 8.3.3.1.6 Cable Damage Near Splices and Terminations In SSER16, NRC reviewed TVA's corrective action plan for Construction Deficiency Report 390/95-02 and found the limited inspections for damaged Class 1E cables to 10 CFR 50.49 installations acceptable. This was a WBN Unit 1 only CDR. ---------- 8.3.3.2: CONFIRMATORY ISSUE - revise FSAR to reflect requirements of shared safety systems In the original 1982 SER, the staff stated that the description and analysis of shared onsite AC and DC systems was under review but was acceptable pending revision of the FSAR.

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In SSER3, the confirmatory issue was left open to track additional information to be incorporated in the FSAR. In a letter dated September 13, 1991, TVA provided the additional information. In SSER13, NRC closed the issue. In SSER14, NRC added additional clarification.

8.3.3.2.2 Sharing of AC Distribution Systems and Standby Power Supplies Between Units 1 and 2

In the SER and SSER3, NRC reviewed the design to the guidelines of RG 1.81 and determined it was acceptable pending revision to the FSAR. NRC noted discrepancies in the FSAR. By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. In SSER13, NRC closed the issue.

8.3.3.2.3: CONFIRMATORY ISSUE for design of sharing raceway systems between units

In the original SER, NRC indicated that the design for sharing of raceway systems between units would be verified during the electrical drawing review. The staff confirmed that cable routing was in accordance with accepted separation criteria and closed the issue in SSER2.

8.3.3.2.4: LICENSE CONDITION – Possible sharing of DC control power to AC switchgear

In the original 1982 SER, staff required that all possible interconnections between redundant divisions through normal and alternate power sources to various loads be identified in the FSAR. TVA letter dated January 17, 1984, provided the information. NRC closed the issue in SSER3.

8.3.3.3: LICENSE CONDITION – Testing of associated circuits

In the original 1982 SER, staff required that protective devices used to isolate non-Class 1E from Class 1E circuits be of high quality commensurate with their importance to safety and be periodically tested. TVA letter dated January 17, 1984, provided the information. NRC closed the issue in SSER3.

8.3.3.3: LICENSE CONDITION – Testing of non-class 1E cables

In the original 1982 SER, staff required that protective devices used to isolate non-Class 1E from Class 1E circuits be of high quality commensurate with their importance to safety and be periodically tested. TVA letter dated January 17, 1984, provided additional information. NRC closed the issue in SSER3.

8.3.3.3 Physical Independence (Compliance with GDC 17)

By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. The information was incorporated into the FSAR by amendment 71. Surveillance requirements for the testing of protective devices used to protect Class 1E circuits from failure of non-Class 1E circuits were incorporated into the Technical Requirements Manual (TRM). This issue was closed based on review of the TRM in SSER 13.

Unit 2 Action: Incorporate testing requirements into the Unit 2 TRM.

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8.3.3.3 Physical Independence (Compliance with GDC 17)

In SSER13, NRC cited differences between RG 1.75 and the WBN design criteria (WB-DC-30-4). In SSER14, NRC continued the review. NRC requested additional information for both WBN units by letter dated March 28, 1994. TVA responded for both WBN units by letters dated July 29, 1994, January 11, 1995, and June 5, 1995. In SSER16, NRC found separation between open cable trays (including cables in free air) adequate.

8.3.3.5.1 Compliance with Regulatory Guides 1.108 and 1.118

In SSERs 13, 14 and 15, NRC reviewed WBN compliance with RGs 1.108 and 1.118. In SSER13, NRC reviewed WBN's use of temporary jumper wires when portable test equipment is used during testing. The justification was documented in the FSAR. In SSER14 and 15, NRC reviewed Class 1E standby power system testing, testing DG full load rejection capability and non-class 1E circuitry for transmitting signals needed for starting DGs. NRC concluded that the features were appropriately tested.

8.3.3.5.2: CONFIRMATORY ISSUE - incorporate commitment to test only one of four diesel generators at one time

In the original 1982 SER, the NRC found the commitment to test DGs one at a time acceptable pending its incorporation into the FSAR. In SSER2, NRC reviewed the documentation and closed the issue.

8.3.3.5.3 Time Constraints for Stability of EDG During No-Load Startup Testing

In SSER16, NRC reviewed and approved changes to the no load emergency diesel generator testing surveillance requirements.

Unit 2 Action: Incorporate into WBN Unit 2 TS surveillances.

8.3.3.6: CONFIRMATORY ISSUE involving evaluation of penetrations' ability to withstand failure of overcurrent protection device

In the original 1982 SER, staff required a reevaluation of the penetrations' capability to withstand, without seal failure, the total range of available time-current characteristics assuming a single failure of any overcurrent protective device. In SSER3, staff found the results of the evaluation acceptable pending the information being incorporated in the FSAR. The staff reviewed the FSAR and closed the issue for both units in SSER7.

8.3.3.6: LICENSE CONDITION – Testing of reactor coolant pump breakers

In the original 1982 SER, staff required that the redundant fault current protective devices for the reactor coolant pump circuits meet RG 1.63. In SSER2, staff reviewed the design and concluded it met RG 1.63.

8.3.3.6 Compliance with GDC 50

By letter dated June 20, 1991, for both units, NRC requested additional information on Section 8 of the FSAR. TVA responded for both units by letter dated September 13, 1991. The information was incorporated into the FSAR in amendment 70. In SSER13, NRC indicated that the issue was resolved.

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
8.4.0		CI	Station Blackout (SBO) - SE for both units – March 18, 1993; SSE for both units – September 9, 1993. Unit 2 Action: Implement SBO requirements.
8.5.0		NA	Area not addressed in 1981 Standard Review Plan.
8.5.1		NA	Area not addressed in 1981 Standard Review Plan.
9.0.0	10	C	In SSER10, the staff completed its review of the additional DG building and that review is documented in Sections 9.2.1, 9.4.5, 9.5, 9.5.1, 9.5.4, 9.5.6, 9.5.7 and 9.5.8 of SSER10.
9.1.0	5	C	In response to TVA letters requesting relief from the requirement of 10 CFR 70.24 to have a criticality monitor installed in the fuel storage area until irradiated fuel is placed in the area, the staff granted an exemption from the requirement in SSER5.
9.1.1	0	C	Approved for both units in SER.
9.1.2	16	C	In SSER5, the staff acknowledged notification by TVA of a contract with DOE for DOE to accept spent fuel from WB and stated that they had no more concerns about this issue. In SSER15, the staff reviewed TVA's proposed resolution of the Boraflex degradation issue and found it acceptable. In SSER16, the staff reviewed changes in design basis with respect to placement of fuel assembly, and structural aspects of rack fabrication deficiencies, considering that TVA planned to replace the racks by the first scheduled refueling outage. The staff noted that the replacement racks have approximately the same capacity as the original WB racks. The staff concluded that the proposed changes were acceptable provided that no single rack load exceeded 80% of its original capacity.
9.1.3	15	C	In SSER11, the staff reviewed TVA's revised commitment regarding testing of spent fuel pool cooling pumps and found it acceptable. As a result of a submittal filed as a petition pursuant to 10 CFR 2.206 regarding spent fuel storage safety issues, the staff reevaluated the spent fuel cooling capability at WB considering the identified issues and concluded that the spent fuel cooling system satisfied the requirements of GDC 44 with regard to transferring heat from the spent fuel to an ultimate heat sink under normal operating and accident conditions in SSER15.
9.1.4	13	OV	LICENSE CONDITION – Control of heavy loads (NUREG-0612) The staff noted in SSER3 that they were reviewing TVA's submittals regarding NUREG-0612 and concluded in SSER13 that the license condition was no longer necessary based on their review of TVA's response to NUREG-0612 guidelines for Phase I in TVA letter dated July 28, 1993. Unit 2 Action: Implement NEI guidance on heavy loads.
9.1.5		NA	Addressed in 9.1.4.
9.2.0	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
9.2 .1	18	O	In SSER9, the staff noted that Amendment 65 indicated that ERCW provided cooling to the instrument room chillers, instead of room coolers and stated that conclusions in the SER and supplements were still valid. In SSER10, the staff reviewed discrepancies between FSAR figures pertaining to the raw cooling water system and its valving and TVA's clarification of these discrepancies, and considered them resolved. In SSER18, the staff concluded that ERCW does not conform to GDC 5 for two-unit operation. Unit 2 Action: Appropriate measures will be taken to ensure that the ERCW system is fully capable of meeting design requirements for two unit operation.
9.2 .2	5	CI	CONFIRMATORY ISSUE - relocate component cooling thermal barrier booster pumps above probable maximum flood (PMF) level before receipt of an OL TVA committed to relocate the pumps above PMF level and the staff found this acceptable. Implementation for this issue was resolved for Unit 1 in SSER5 when the staff verified in IR 390/84-20 that the pumps had been relocated. Additionally, IR 390/83-06 and 391/83-05 verified that the 4 booster pumps had been relocated and the construction deficiency reports identifying this issue for both units were closed. Unit 2 Action: Verify relocation of pumps for Unit 2.
9.2 .3	0	C	Approved for both units in SER.
9.2 .4	9	C	In SSER9, the staff noted that potable water requirements were incorrectly stated in the SER, but this change did not affect the conclusions reached in the SER.
9.2 .5	0	C	Approved for both units in SER.
9.2 .6	12	C	In SSER12, the staff noted that FSAR Amendment 72 revised the reserved amount of condensate for each units auxiliary feedwater system from 2000,000 gallons to 210,000 gallons and that this did not change the conclusions reached in the SER or supplements.
9.3 .0	0	C	Approved for both units in SER.
9.3 .1	0	C	Approved for both units in SER.
9.3 .2	16	CT	LICENSE CONDITION – Post-Accident Sampling System In SSER3, the staff identified the criteria from Item II.B.3 in NUREG-0737 that were unresolved in the SER and reviewed TVA responses for these items. The staff stated that the post-accident sampling system met all of the criteria and was acceptable. They also stated that the proposed procedure for estimating the degree of reactor core damage was acceptable on an interim basis and that TVA would be required to provide a final procedure for estimating the degree of core damage before start-up following the first refueling outage. In SSER5, the staff stated that due to the 5 year delay in WB licensing, TVA should commit to submitting the procedure at an earlier date. TVA submitted a final procedure for estimating degree of core damage by letter dated June 10, 1994, and the license condition was deleted in SSER14. In SSER16, the staff reviewed TVA's revised emergency plan implementing procedure governing the use of the methodology provided in the June 10, 1994, submittal, and other plant data, for addressing degree of reactor core damage and found the methodology and implementing procedure acceptable. Unit 2 Action: Eliminate requirement for Post-Accident Sampling System in Technical Specifications (Identified as CT in NRC letter dated May 28, 2008).
9.3 .3	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
9.3 .4	0	C	Approved for both units in SER.
9.4 .0	0	C	Approved for both units in SER.
9.4 .1	9	C	In SSER9, the staff clarified control room isolation after activation of SI signal from either unit, or upon detection of high radiation or smoke concentration in outside air supply stream and stated that conclusions reached in SER and supplements were still valid.
9.4 .2	0	C	Approved for both units in SER.
9.4 .3	0	C	Approved for both units in SER.
9.4 .4	0	C	Approved for both units in SER.
9.4 .5	19	C	In SSER9, the staff reviewed the design of the additional DG building ventilation system (FSAR Amendment 66 submittal dated May 20, 1991, for both units) and determined that conclusion reached in SER was still valid and design was acceptable. In SSER10, the staff had concerns regarding periodic testing of the ventilation system for the additional DG building; muffler room exhaust fan failure or exhaust blockage; missile protection for the muffler fan exhaust structure; and potential for blockage and turbine missile damage of air intake structures. These were all resolved in SSER10, with the exception of the potential for external blockage of the air intake structure by missile impact. In SSER11 the staff found TVA's response and procedural change to address potential blockage of the air intake structure by missile impact acceptable. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service. In SSER14, the staff clarified statements made in the SER by stating that none of the ventilation systems for the ERCW pumping station was safety related, but the failure of both mechanical equipment room ventilation fans would not prevent operation of any safety related equipment. Thus, the conclusions reached in the SER were still valid, and the systems were still acceptable. In SSER16, the staff reviewed design changes to the DG building ventilation system, since the original design was reviewed, and concluded that the judgments made in the SER and supplements did not change and the system was still acceptable. In SSER19, the staff clarified their statements about the diesel engine room exhaust fans, stating that since the fans automatically start when the DG starts, DG testing results in operation of the diesel engine room exhaust fans.
9.5 .0	10	C	In SSER10, the staff reviewed 55 questions previously asked concerning the 4 original DGs for applicability to the additional DG and additional responses from TVA and had no concerns.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
9 . 5 . 1	19	C	9.5.1.2: OUTSTANDING ISSUE for Fire Protection Program 9.5.1.3: CONFIRMATORY ISSUE – Electrical penetrations documentation 9.5.1.3: LICENSE CONDITION – Fire protection program In SSER10, the staff noted that the fire hazard analysis for the additional DG building would be included in the WB Fire Protection report. The staff reviewed the building design for compliance with BTP 9.5-1, Appendix A and found it in conformance with the BTP. They also asked TVA to verify that the fire fighting systems installed in the DG building meet GDC 3 and stated that TVA's response satisfied their concerns. In SSER18, the staff concluded that the Fire Protection program for Watts Bar conformed to the requirements of 10 CFR 50.48 and was acceptable except for the fire barrier seal program and emergency lighting inside the Reactor Building. Additionally, the staff considered the confirmatory issue involving electrical penetration documentation resolved in SSER18 on the basis of the safety evaluation of the revised Fire Protection program included in Appendix FF of SSER18. In Appendix FF of SSER19, a safety evaluation of the Fire Protection program contains a detailed evaluation of fire barrier penetration seals. The staff concluded that TVA's penetration seal program adequately demonstrates the fire resistive rating of the penetrations, and that they conform to the guidelines of Positions D.1.j and D.3.d of Appendix A to BTP 9.5.1 and were acceptable. The safety evaluation also includes TVA's revised position on emergency lighting, which was found to be acceptable.
9 . 5 . 2	5	CI	LICENSE CONDITION – Performance testing of communications system The staff resolved this license condition in SSER5 based on TVA's letter of March 18, 1985 for both units, which described its testing of communications systems. Unit 2 Action: Perform testing of communication systems on Unit 2.
9 . 5 . 3	0	C	Approved for both units in SER.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
9.5.4	12	C	9.5.4.1: CONFIRMATORY ISSUE - include required language in operating instruction to ensure no-load and low-load operation is minimized and revise operating procedures to address increased diesel generator load after it has run for an extended period of time at low or no load In SSER5, the staff verified that plant operating procedures had been revised to incorporate requirements that ensure that operational no-load and low-load conditions will not harm the diesel generators. ---------- 9.5.4.1: LICENSE CONDITION – Diesel Generator reliability The staff verified that the modifications necessary to comply with NUREG/CR-0660 had been completed and, as stated above, requirements had been incorporated into operating procedures. Thus, this license condition was resolved in SSER5. ---------- 9.5.4.1: OUTSTANDING ISSUE for staff to complete review to determine if diesel generator auxiliary support systems can perform their design safety functions under all conditions, after receipt of all requested information. In SSER5, the staff resolved the issue of the completeness of its review of the emergency diesel engine lubrication oil system. ---------- 9.5.4.1: OUTSTANDING ISSUE to design skid-mounted piping and components from the day tank to the diesel engine as seismic Category I and to ASME Section III, Class 3 The staff reviewed standards to which emergency diesel engine skid mounted auxiliary system piping and associated components were designed, as well as the testing and inspections to be performed on these systems, as provided in TVA letters dated February 15, 1985, March 18, 1985, and August 30, 1985, and concluded that they were acceptable in SSER5. The staff considered this issue resolved. They stated that this resolution applied to the fuel oil, cooling water, air starting, lubrication, and combustion air intake and exhaust systems (9.5.4.2, 9.5.5, 9.5.6, 9.5.7 and 9.5.8). ---------- 9.5.4.2: CONFIRMATORY ISSUE - provide missile protection for fuel oil storage tank vent lines The staff found TVA's commitment to provide missile protection for the fuel oil storage tank vent lines acceptable and verified that the protection had been installed and considered this issue resolved in SSER5. ---------- In SSER9, the staff stated that the conclusions reached in the SER, SSER3 and SSER5 regarding the EDG auxiliary supports systems applied to the additional EDG. This conclusion applied to sections 9.5.5, 9.5.6, 9.5.7 and 9.5.8, as well. In SSER10, the staff questioned tornado missile protection and seismic requirements for the additional DG fuel oil storage tank fill lines and found TVA's response acceptable. The staff questioned the difference between the design of the fuel oil transfer pump for the additional DG and the design of the DG building storage pumps, and found TVA's explanation and proposed clarification to the FSAR acceptable. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service. In SSER11, the staff noted the revised capacity of the 7-day fuel oil storage tank identified in FSAR Amendment 69 and stated that it still exceeded the amount needed for a 7-day supply and, therefore, did not affect the staff's conclusions reached in the SER or supplements.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
			In SSER12, the staff determined that the fire watch required when routing a hose from a fuel oil delivery vehicle to the DG tank manway openings in the DG building was no longer required based on TVA actions in response to other fire protection requirements.
9.5 .5	11	C	OUTSTANDING ISSUE to design engine cooling water system piping and components for all engines up to the engine interface, including auxiliary skid mounted piping, to ASME Section III, Class 3 The staff reviewed standards to which emergency diesel engine skid mounted auxiliary system piping and associated components were designed, as well as the testing and inspections to be performed on these systems, and concluded that they were acceptable in SSER5. The staff considered this issue resolved. This resolution applies to the fuel oil, cooling water, air starting, lubrication, and combustion air intake and exhaust systems. ---------- In SSER5, the staff also resolved concerns regarding ambient DG room temperature and its impact on pre-heating DG units, the time period the DG is capable of operating fully loaded without secondary cooling, and the possibility of the cooling water system becoming air bound due to the expansion tank location. In SSER11, the staff noted that FSAR Amendment 70 stated that coolant temperature would be maintained between 125 and 155 degrees F, not the 115 and 125 stated in the SER. They stated that this clarification did not alter the staff's conclusions previously reached in the SER or its supplements.
9.5 .6	10	C	OUTSTANDING ISSUE to design engine air-starting system piping components for all engines up to the engine interface, including auxiliary skid mounted piping, to ASME Section III, Class 3 The staff reviewed standards to which emergency diesel engine skid mounted auxiliary system piping and associated components were designed, as well as the testing and inspections to be performed on these systems, and concluded that they were acceptable in SSER5. The staff considered this issue resolved. This resolution applies to the fuel oil, cooling water, air starting, lubrication, and combustion air intake and exhaust systems. ---------- In SSER10, the staff questioned protection of the additional DG electrical starting system components from water spray, and whether diesel engine control functions supplied by the air starting system could interfere with the engines' ability to perform its safety function once it has started. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
9.5 .7	10	C	OUTSTANDING ISSUE to perform additional modification, or provide justification for acceptability of proposed modification, to ensure lubrication of all wearing parts of the diesel engine either on an interim or continuous basis and to provide a more detailed description of the lubricating oil system and a description of the diesel engine crankcase explosion protection features In response to a staff concern regarding dry diesel engine starting, TVA proposed using the manufacturers' modification and provided justification for its ability to ensure lubrication of all parts of the diesel engine. The staff found this acceptable in SSER3. TVA submittal of March 18, 1985, responded to a staff request to describe the features that protect the diesel engine crankcase from exploding. In SSER5, on the basis of this submittal, the staff concluded that the emergency diesel engine lubrication oil system can perform its safety function and is acceptable. This issue was resolved. ---------- OUTSTANDING ISSUE to design standby diesel engine lube oil system piping and components up to the engine interface, including skid mounted piping, to ASME Section III, Class 3 The staff reviewed standards to which emergency diesel engine skid mounted auxiliary system piping and associated components were designed, as well as the testing and inspections to be performed on these systems, and concluded that they were acceptable in SSER5. The staff considered this issue resolved. This resolution applies to the fuel oil, cooling water, air starting, lubrication, and combustion air intake and exhaust systems. ---------- In SSER10, the staff questioned the ability to replenish the additional DG lube oil system without interrupting operation of the DG and found TVA's provision to replenish lube oil acceptable. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service.
9.5 .8	10	C	OUTSTANDING ISSUE to design standby diesel engine combustion air intake and exhaust system piping and components up to the engine interface to ASME Section III, Class 3 and recommendations of RG 1.26 The staff reviewed standards to which emergency diesel engine skid mounted auxiliary system piping and associated components were designed, as well as the testing and inspections to be performed on these systems, and concluded that they were acceptable in SSER5. The staff considered this issue resolved. This resolution applies to the fuel oil, cooling water, air starting, lubrication, and combustion air intake and exhaust systems. ---------- In SSER10, the staff expressed a concern regarding products of combustion from a fire in the air intake/muffler room, or from the DG exhaust gases, impacting the additional DG or the other DGs. TVA's response addressed the concern. The staff also questioned inspection, surveillance and testing of the DG exhaust system and found the system design adequate to address their concern. In addition, the staff questioned pressure losses through the DG air intake and exhaust systems and determined that their designs were acceptable. TVA stated in a submittal dated July 28, 1993, that they did not plan to place the additional diesel generator in service.
10.0 .0	0	C	Approved for both units in SER.
10.1 .0	0	C	Approved for both units in SER.
10.2 .0	5	C	In SSER5, the staff agreed that the interval between periodic turbine valve testing could be increased for WB from weekly to monthly.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
10 . 2 . 1	12	C	In SSER12, the staff reviewed the revised description of the 3 independent overspeed turbine trip systems, consistent with FSAR Amendment 77, and stated that this review did not alter the conclusions reached in the SER and the system remained acceptable.
10 . 2 . 2	0	C	Approved for both units in SER.
10 . 3 . 0	0	C	Approved for both units in SER.
10 . 3 . 1	19	C	In SSER12, the staff described changes to the MSIV closing signals as a result of changes to the Eagle-21 process protection system. They stated that the conclusions reached in the SER were still valid and the main steam system remained acceptable. In SSER19, the staff evaluated a revision in FSAR Amendment 91 to the closure time of the MSIVs from 5 seconds after receiving a closure signal to 6 seconds and concluded it was acceptable.
10 . 3 . 2	0	C	Approved for both units in SER.
10 . 3 . 3	0	C	Approved for both units in SER.
10 . 3 . 4	5	OT	LICENSE CONDITION – Secondary water chemistry monitoring and control program The staff determined that the secondary water chemistry monitoring and control program was being included in the administrative section of the Technical Specifications and resolved this for Unit 1 in SSER5. Unit 2 Action: Take same action for Unit 2.
10 . 4 . 0	0	C	Approved for both units in SER.
10 . 4 . 1	9	C	In SSER9, the staff clarified the description of the main condenser and stated that this clarification did not affect the conclusion reached in the SER.
10 . 4 . 2	0	C	Approved for both units in SER.
10 . 4 . 3	0	C	Approved for both units in SER.
10 . 4 . 4	5	C	In SSER5, the staff concluded that periodic stroking of the turbine bypass system valves may be performed according to plant operating procedures and no Technical Specification was necessary to ensure this testing.
10 . 4 . 5	0	C	Approved for both units in SER.
10 . 4 . 6	0	C	Approved for both units in SER.
10 . 4 . 7	14	C	In SSER14, the staff evaluated changes that TVA made in Amendment 82 to the FSAR adding a new feedwater isolation signal and clarifying the isolation signal generated by a reactor trip, and stated that the revisions did not affect the conclusions reached in the SER. The staff also corrected an unrelated error they made in the SER regarding the time for the main feedwater regulation valves to close after receipt of a feedwater isolation signal and stated that the conclusions reached in the SER remained valid.
10 . 4 . 8	0	C	Approved for both units in SER.
10 . 4 . 9	14	C	In SSER14, the staff discussed reductions in auxiliary feedwater pump design-basis flow rates and new minimum flow requirements. They reviewed TVA's reanalysis of design-basis events and concluded that the revised flow rates were acceptable and the conclusions reached in the SER remained valid.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
11 . 0 . 0	0	C	Approved for both units in SER.
11 . 1 . 0	16	OV	This item remains open pending closure of 11.4.0 and 11.5.0
11 . 2 . 0	16	C	In SSER 4, the staff evaluated the revised description contained in FSAR Revision 49 and 54 and determined that the conclusions reached in the original SER were not affected by the revisions. In SSER 16, the staff superseded its previous review of the liquid waste management system. The staff concluded that TVA had submitted sufficient design information for both Units 1 and 2 liquid waste management system in accordance with 10 CFR 50.34a requirements and that the LWMS for Watts Bar Units 1 and 2 met the acceptance criteria of SRP Section 11.2 and was, therefore, acceptable.
11 . 3 . 0	16	C	In the SER, the staff identified that the hydrogen and oxygen monitoring system did not meet the acceptance criteria because redundant monitors had not been provided and because the system was not designed to automatically initiate action to mitigate the potential for explosion in the event of high oxygen content. This issue was addressed by Technical Specifications discussed in the original SER and in SSER 8 but was later resolved in SSER 16. Based upon NRC review of TVA's February 17, 1995, letter (submitted on both dockets), the staff accepted the WBN's system approach of preclusive of gas buildup, as allowed by SRP Section 11.3 guidelines, if TVA submitted an administrative program to satisfy administrative controls for TS 5.7.2.15, "Explosive Gas and Storage Tank Radioactivity Monitoring Program." As stated in TVA's letter dated July 21, 1995, the program would provide for monitoring and control of potential explosive mixtures, limit the concentration of oxygen, and surveillance to ensure that the limits are not exceeded. As a result of an SSER 16 review, the staff concluded that the GWMS for Watts Bar Units 1 and 2 met the acceptance criteria of SRP Section 11.3 and was acceptable.
11 . 4 . 0	16	OV	On the basis of its review in SSER 16, the staff found the process control program for Watts Bar acceptable and concluded that the solid waste management system for Watts Bar Unit 1 conformed to the acceptance criteria of SRP Section 11.4 and was, therefore, acceptable. Unit 2 Action: Provide system description and information on QA provisions for Unit 2 Solid Waste Management System and information on the Process Control Program.
11 . 5 . 0	20	OV	In SSER 16, the staff updated its review to Amendment 89, and TVA's submittal dated February 17, 1995. The staff concluded that the process and effluent radiological monitoring and sampling system for Watts Bar Unit 1 complied with 10 CFR 20.1302 and GDCs 60, 63, and 64. The staff also concluded that the system design conformed to the guidelines of NUREG-0737, RGs 1.21 and 4.15, and applicable guidelines of RG 1.97 (Rev. 2). Thus, the system met the acceptance criteria of SRP Section 11.5 and was, therefore, acceptable. In SSER 20, the staff agreed that TVA did not commit to RG-4.15, Revision 1 as reflected in TVA's July 21, 1995 letter. In that letter, TVA had stated that the radiation monitoring system generally agrees with and satisfies the intent of the RG 4.15 except for specific calibration techniques and frequencies. The staff then reiterated its earlier finding stated in SSER 16, Section 11.5.1, that the radiation monitoring system for Watts Bar Unit 1 meets the intent and purpose of RG 4.15, with respect to quality assurance provisions for the system. The staff modified one sentence from SSER 16 and then concluded by stating that the other conclusions given in SSER16 continued to be valid. Unit 2 Action: Provide system description and information on QA provisions for the Unit 2 Radiation Monitoring System

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
11 . 6 . 0	16	C	In SSER 8, the staff reviewed the preoperational REMP program provided by letter dated June 14, 1991 (submitted for both dockets) The staff concluded in SSER Section 1.6.1, "Offsite Radiological Monitoring Program," that the Watts Bar preoperational REMP as proposed was adequate to provide baseline data which will assist in verifying radioactivity concentrations and related public exposures during plant operation, and was therefore acceptable. The staff provided a safety evaluation for both units via a September 10, 1991 letter. In SSER 16, the staff superseded previous evaluations provided in this section by Sections 11.1 through 11.5 of this supplement, except for the material in Section 11.6.1 of SSER 8, which was unaffected by supplement 16.
11 . 7 . 0	0	OT	This item will remain open pending resolution of Item 11.7.2.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
11 . 7 . 1	6	CI	LICENSE CONDITION (6a) - Accident monitoring instrumentation II.F.1 – Noble Gas monitor In SSER 5, TVA submitted letter dated April 26, 1985, on the Unit 1 docket which stated that the Unit 2 shield building vent monitor could not be installed by the time Unit 1 fuel load was scheduled in 1985 because of procurement problems. Since the 1985 fuel load was delayed, TVA subsequently committed in letter dated October 11, 1990, that this monitor and its sampler would be operational before fuel was loaded in Unit 1. This commitment eliminated the staff's concern and resolved the proposed License Condition 6a. Also, in SSER 5, TVA letter dated November 8, 1983 (submitted on both Unit 1 and Unit 2 dockets) requested an exception to the requirement to monitor pressurized-water reactor steam safety valve discharge and atmospheric steam dump valve discharge to be monitored by high-range noble gas effluent monitors by stating that adequate instrumentation was provided to detect a steam generator tube rupture. The staff disagreed with this approach which resulted in TVA subsequently committing in a letter dated October 11, 1990 (submitted on both dockets) that the required high range noble gas effluent monitor would be operational before fuel load. This commitment resolved the staff's concern and eliminated the need for License Condition 6a. ---------- LICENSE CONDITION (6b) - Accident monitoring instrumentation II.F.1 – Iodine particulate sampling See 7.5.2. In addition, in SSER 5, by letter dated April 26, 1985, submitted on the Unit 1 docket, TVA committed to have the capability for continuous collection in place (i.e., procedures and any minor system modifications necessary) before exceeding 5-percent power. The staff evaluated this commitment and found it acceptable. Since 1985 licensing of Watts Bar was delayed, TVA subsequently committed via letter dated January 3, 1991, as discussed in SSER 6 that the procedural revision and upgrade of the radiation monitors would be done by Unit 1 fuel load. Thus License Condition 6b was resolved in SSER 6. In SSER 6, TVA via letter dated January 3, 1991, committed to have the procedural revision and upgrade of the radiation monitors by fuel load. This commitment ensured the plant would have the capability for continuous collection of post accident gaseous effluents by fuel load. ---------- In SSER 5, the staff noted that the WBN design did not include a high-range noble gas effluent monitor as described in NUREG-0737, Item II.F.1, Attachment 1, for the auxiliary building vent because the release is diverted to the shield building vent for design-basis accidents. A low-range to high-range radiation monitor is provided in the shield building ventilation stack. By letter dated November 22, 1983, TVA requested an exception to NUREG-0737, Item II.F.1, concerning the installation of high-range noble gas monitors on the auxiliary building vent at Watts Bar. TVA provided the staff additional information at a meeting on December 20, 1983, and subsequently in a submittal dated January 24, 1984. The staff concluded that the auxiliary building vent was not considered to be a potential accident release pathway and, therefore, the Watts Bar Nuclear Plant design, as described above, does not need to be changed to provide for the addition of a high-range noble gas effluent monitor, as described in NUREG-0737, Item II.F.1, Attachment 1, for the auxiliary building vent. The above items were identified as CI by NRC in May 28, 2008 letter.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
11 . 7 . 2	16	OT	NUREG-0737, III.D.1.1, "Primary Coolant Outside Containment" - Resolved for Unit 1 only in SSER10; reviewed in Appendix EE of SSER16. Unit 2 Actions: Include the waste gas disposal system in the leakage reduction program and incorporate in Unit 2 Technical Specifications. ---------- In SSER 5, TVA by letter dated October 4, 1984, submitted a justification for excluding the waste gas system from the leak reduction program under NUREG-0737, Item III.D.1.1. The staff has evaluated the TVA's submittal and found that sufficient information had not been submitted to provide assurance that significant quantities of radioactive materials would not enter the waste gas system in the event of an accident. On this basis, the staff concluded that the leakage reduction program was acceptable if the following systems were to be included leakage reduction program: (1) residual heat removal, (2) containment spray, (3) safety injection, (4) chemical and volume control, (5) sampling, and (6) waste gas. The staff proposed License Condition 24 and would be resolved if TVA accepted the change as stated above. In SSER 6, the staff reviewed TVA's letter dated March 27, 1986, and agreed that TVA had justified excluding the WGDS from the program. In SSER 10, the staff resolved Condition 24, when upon review of TVA letter dated August 27, 1992, they noted that WGDS specification was included in the draft TS Section 5.7.2.
12 . 0 . 0	14	C	Approved for both units in SER.
12 . 1 . 0	14	C	In SSER 10, the staff updated its evaluation based upon review of FSAR Amendments 65 through 71 and TVA letter dated January 3, 1991 submitted on U1 docket only. The staff acknowledged that TVA would soon revise FSAR again due to reflect recent changes to 10 CFR Part 20. In SSER 14, the staff reviewed the revised FSAR to reflect the 10 CFR Part 20 changes. Details of the staff's review are delineated in the sections that follow .
12 . 2 . 0	14	C	In SSER 14, the staff reviewed the revised FSAR discussion of ALARA design and operational considerations in this section that were made to clarify that the total effective dose equivalent for each individual would be maintained ALARA. As revised, FSAR Section 12.1 was consistent with the requirements in 10 CFR 20.1101 and 20.1702 and was, therefore, acceptable to the staff.
12 . 3 . 0	14	C	In SSER 14, the staff reviewed the revised FSAR descriptions of the radioactive sources expected to result from normal plant operations, anticipated operational occurrences, and accident conditions. The staff concluded that the descriptions of plant radioactive sources, as revised, conformed to the acceptance criteria in SRP Section 12.2 and were, therefore, acceptable to the staff.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
12 . 4 . 0	18	C	In SSER 10, the staff reviewed revised operational test frequency of area radiation monitors from monthly to quarterly and found that TVA's program met the provisions of 10 CFR 20.1601(c) and the acceptance criteria in SRP Section 12.3 and was, therefore, acceptable. In SSER 14, the staff reviewed FSAR Amendment 84 in light of the revised requirements of 10 CFR Part 20. The staff found these sections, as amended, complied with the acceptance criteria in the SRP and was acceptable to the staff. In addition, the staff reviewed revised FSAR Section which specified the radiation dose rate design criteria for the placement and configuration of plant system valves This section as amended was consistent with the staff's conclusion that Watts Bar can be operated within the dose limits and that radiation doses can be maintained ALARA. Therefore, these changes were acceptable to the staff. In SSER 18, the staff reviewed FSAR Amendments 89 and 90 in which TVA had revised the discussions of the installed area radiation monitoring and the fixed airborne radiation monitoring systems. In addition, Amendment 90 revised the estimated maximum radiation dose rates depicted on the radiation zone maps for several areas in the plant. The staff also reviewed FSAR text changes that clarified the distinctions between a monitor calibration, a monitor channel operational test, and a check source functional test and deleted discussions of fixed airborne radiation monitors in the Unit 2 hot sample room and the Unit 1 control room and were replaced with portable continuous air monitors (CAMs). The staff found this acceptable since it did not change the staff's conclusion documented in SSER 14.
12 . 5 . 0	14	C	In SSER 14, the staff reviewed FSAR Amendment 88 which revised the discussion of the estimate of personnel internal exposures to address the new 10 CFR Part 20 requirements. The staff concluded that this section as amended provided reasonable assurance that the requirements of 10 CFR 20.1502 and 20.1703 would be met. In addition, the staff reviewed FSAR Amendment 84 which updated the predicted maximum annual doses resulting from plan operation and determined that this section as amended provides reasonable assurance that the radiation doses resulting from plant operations would not exceed the limits in 10 CFR 20.1301.
12 . 6 . 0	14	C	OUTSTANDING ISSUE involving Health Physics Program The staff reviewed TVA's RADCON program (formerly the HP program) and found that the WBN organizational structure can provide adequate support for the RADCON program and that organizational changes described in the FSAR amendments met the staff's acceptance criteria. They considered this issue resolved in SSER10. In SSER14, the staff reviewed the revised FSAR sections (through Amendment 88), and found them acceptable.
12 . 7 . 0	0	C	Approved for both units in SER.
12 . 7 . 1	16	CI	NUREG-0737, II.B.2, "Plant Shielding" - NRC reviewed in Appendix EE of SSER16. In SSER 14, the staff reviewed FSAR Amendment 88 which revised the discussion of shielding for accident conditions. The staff stated that this change did not affect the staff's previous conclusion that Watts Bar conformed to the positions in NUREG-0737 Item II.B.2, and was therefore, acceptable to the staff. Identified as CI in NRC letter dated May 28, 2008. Unit 2 Action: Complete Design Review of EQ of equipment for spaces/systems which may be used in post accident operations. CI in NRC May 28, 2008 letter.
12 . 7 . 2	5	CI	NUREG-0737, II.F.1.2.C., "Accident Monitoring Instrumentation" - In SSER5, the staff resolved this license condition for Unit 1 (IR 390/84-09 & IR 390/84-28) due to verification that TVA's commitments regarding the high range in-containment monitor were satisfactory and that it was installed. Identified as CI in NRC letter dated May 28, 2008. Unit 2 Action: Install high range in-containment monitor for Unit 2. CI in NRC May 28, 2008 letter.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
12 . 7 . 3	16	CI	NUREG-0737, III.D.3.3, "In-plant Monitoring of I2 radiation monitoring" - NRC reviewed in Appendix EE of SSER16. Identified as CI in NRC letter dated May 28, 2008. Unit 2 Action: Complete modifications for Unit 2. CI in NRC May 28, 2008 letter.
13 . 0 . 0	0	C	Approved for both units in SER.
13 . 1 . 0	16	C	In SSER16, NRC reviewed the organizational information presented in TVA Topical Report TVA-NPOD89. NRC approval of the topical report and its revisions superseded the staff review in the SER.
13 . 1 . 1	0	C	Approved for both units in SER.
13 . 1 . 2	0	C	Approved for both units in SER.
13 . 1 . 3	8	O	LICENSE CONDITION – Use of experienced personnel during startup In the original 1982 SER, NRC provided a LICENSE CONDITION to ensure TVA augmented the shift staff with individuals that had prior experience with large pressurized water reactor operations. In SSER 8, NRC reviewed TVA's commitment in the FSAR and the Nuclear Quality Assurance Plan to comply with RG 1.8, "Personnel Selection and Training,". NRC staff considered that this provided adequate assurance, and eliminated the LICENSE CONDITION. Unit 2 Action: Submit staffing and NQAP for two unit operation.
13 . 2 . 0	0	C	Approved for both units in SER.
13 . 2 . 1	10	C	In SSER9, NRC reviewed TVA's certification for licensed operator training programs and FSAR Chapter 13 revision to reflect the training program . NRC determined that these were acceptable. In SSER10, NRC reviewed changes to the initial test program for TMI Item I.G.1, "Training During Low Power Testing." NRC found the training requirement satisfied.
13 . 2 . 2	0	C	Approved for both units in SER.
13 . 3 . 0	13	O	In SSER 13, NRC reviewed the Watts Bar Nuclear Plant Radiological Emergency Plan submitted February 12, 1993. This review superseded the review in the SER. Unit 2 Action: Submit WBN REP for two unit operation.
13 . 3 . 1	20	O	In SSER 13, NRC reviewed the Watts Bar Nuclear Plant Radiological Emergency Plan submitted February 12, 1993. This review superseded the review in the SER. In SSER20, NRC completed the review including the findings of the Federal Emergency Management Agency. Unit 2 Action: Submit WBN REP for two unit operation.
13 . 3 . 2	20	O	In SSER 13, NRC reviewed the Watts Bar Nuclear Plant Radiological Emergency Plan submitted February 12, 1993. This review superseded the review in the SER. In SSER13, the staff concluded that the WBN Radiological Emergency Plan (REP) provided an adequate planning basis for an acceptable state of onsite emergency preparedness. In SSER 20, NRC completed the review and found that the REP complied with NRC requirements and was acceptable for the full-power license of WBN Unit 1. Unit 2 Action: Submit WBN REP for two unit operation.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
13 . 3 . 3	20	O	LICENSE CONDITION – Emergency Preparedness (NUREG-0737, III.A.1, III.A.2, III.A.2) The NRC review of Emergency Preparedness in SSER13 superseded the review in the original 1982 SER. In SSER13, the staff concluded that the WBN Radiological Emergency Plan (REP) provided an adequate planning basis for an acceptable state of onsite emergency preparedness, and the LICENSE CONDITION was deleted. In SSER 20, NRC completed the review and found that the REP complied with NRC requirements and was acceptable for the full-power license of WBN Unit 1. Unit 2 Action: Submit WBN REP for two unit operation.
13 . 4 . 0	8	OV	LICENSE CONDITION - Independent Safety Engineering Group (ISEG) (NUREG-0737, I.B.1.2) In SSER 8, NRC indicated that the ISEG would be established as part of the Technical Specifications. Resolved for Unit 1 only in SSER8. Unit 2 action: Implement the alternate ISEG that was approved for the rest of the TVA units including WBN Unit 1 by NRC on August 26, 1999. The function will be performed by the site engineering organizations.
13 . 5 . 0	0	C	Approved for both units in SER.
13 . 5 . 1	0	C	Approved for both units in SER.
13 . 5 . 2	10	CI	OUTSTANDING ISSUE involving operating, maintenance and emergency procedures In the original 1982 SER, this issue was used to track the staff's review of the emergency operating procedures generation package. In SSER9, the staff concluded that the outstanding issue was no longer needed as the staff no longer performed such reviews. The emergency operating procedure development program review is performed under IP 42000, "Emergency Operating Procedures." This inspection will be performed before issuance of an operating license. In SSER10, NRC reviewed TVA's plan for vendor review of the power ascension test procedures and the Emergency Operating Instructions (EOIs). Based on the Watts Bar plant specific simulator, NRC determined that a License Condition to ensure consistency with the Sequoyah EOIs was no longer necessary. Unit 2 Action: Issue operating, maintenance and emergency procedures.
13 . 5 . 3	16	CT	LICENSE CONDITION – Report on outage of emergency core cooling system (NUREG-0737, II.K.3.17) In the original 1982 SER, the NRC accepted TVA's commitment to develop and implement a plan to collect emergency core cooling system outage information. In SSER3, the staff accepted a revised commitment from an October 28, 1983, letter to participate in the nuclear power reliability data system and comply with the requirements of 10 CFR 50.73. ---------- Reporting of Safety Valve and Relief Valve Failures and Challenges (II.K.3.3) In SSER 16, NRC reviewed TVA revised commitment to report failures and challenges to PORVs and safety valves in accordance with the Technical Specifications. Unit 2 Action: Include, as necessary, in the Technical Specifications. CT in NRC May 28, 2008 letter.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
13 . 6 . 0	20	C	OUTSTANDING ISSUE to file appropriate revision to the Physical Security Plan In the original 1982 SER, the staff identified certain outstanding issues with TVA's Physical Security Plan. In SSER 1 NRC evaluated revisions to the plan submitted July 29, 1982. In SSER15, NRC provided a safety evaluation that concluded that WBN conforms to the requirements of 10 CFR 50.73. ---------- LICENSE CONDITION – Physical security of fuel in containment In SSER1, part of the Physical Security Plan (PSP) was not in accordance with the regulation. TVA submitted a new PSP on June 17, 1992. In SSER10, the staff concluded that the provisions for protection of the containment during major refueling and maintenance met the intent of the regulation. ---------- LICENSE CONDITION - Land Vehicle Bomb Control Program In SSER20, NRC added a license condition for WBN Unit 1 to fully implement the Surface Vehicle Bomb Rule by February 17, 1996. TVA letter to NRC dated February 15, 1996, (submitted for both units) notified NRC that Watts Bar had fully implemented the program.

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SER SECTION	SSER #	*	ADDITIONAL INFORMATION
14 . 0 . 0	19	CI	LICENSE CONDITION – Report changes to Initial Test Program

In the original 1982 SER, this LICENSE CONDITION was intended to require TVA report to NRC within 30 days of modifying an approved initial test. In SSER7, the NRC accepted a commitment in TVA's July 1, 1991, letter to notify NRC within 30 days of any changes to the Startup Test Program made under 10 CFR 50.59.

Unit 2 action: Notify NRC within 30 days of any changes to the Startup Test Program made under 10 CFR 50.59.

In SSER3, the staff reviewed additional information and FSAR amendments through 46 addressing concerns identified by the staff in the FSAR. They concluded in SSER3 that the Initial Test Program (ITP), with the exception of open items as a result of modifications made to the program in subsequent amendments (through 53) for which the staff requested additional information, would meet the acceptance criteria of SRP section 14.2 and successful completion of the program would demonstrate functional adequacy of structures, systems and components.

In SSER5, the staff reviewed TVA submittals to address the open items from SSER3 and FSAR amendments through 55, and concluded that the program met the acceptance criteria of the SRP and was acceptable.

In SSER9, the staff stated that TVA commitments to reinstate the loss-of-offsite-power test for Unit 2 and revise the acceptance criteria for the reactor building purge system air flow rate (TVA letter dated July 10, 1991, for both units) were found acceptable to address two issues identified by the staff during their review of the FSAR through Amendment 67.

In SSER10, the staff agreed with TVA that there was no need to perform any natural recirculation test for Units 1 and 2 (See subsection 5.4.3.)

In SSER12, the staff evaluated the ITP based on Amendment 74 to the FSAR, which addressed most of the staff's concerns raised during review of Amendment 69, in which the ITP was completely revised. The staff found that Chapter 14, as revised by Amendment 74, was generally adequate and in accordance with review criteria with the exception of 7 items, which would be evaluated in later supplements.

In SSER14, the staff evaluated changes made by TVA in Amendments 84 and 86, as well as 5 TVA letters submitted during 1994 to resolve the issues identified by the staff in SSER12, and changes made in FSAR Amendment 88 to address concerns still open prior to that amendment. The staff found that, with the exception of open items that remained open pending receipt and review of TVA's responses, the WB Units 1 and 2 ITP description contained in FSAR Chapter 14, updated through Amendment 88, was generally comprehensive and encompassed the major phases of the program requirements.

In SSER16, SSER18 and SSER19, the staff evaluated the ITP through amendments 89, 90 and 91 respectively and stated each time that it found the program to be comprehensive and encompassing the major phases of the testing program guidance presented in the SRP.

A Unit 2 issue to verify capability of each common station service transformer to carry load required to supply ESF loads of 1 unit under LOCA condition in addition to power required for shutdown of non-accident unit was raised in SSER14, and the NRC stated that before an OL can be issued for Unit 2, TVA would have to demonstrate the capability of each CSST to carry the loads of one unit under LOCA conditions in addition to power required for shutting down the non-accident unit. TVA agreed with the NRC position in a January 5, 1995, letter and the issue was resolved in SSER16.

Unit 2 action: Amend FSAR Chapter 14 to reflect the capability of each CSST to carry the loads of one unit under LOCA conditions in addition to power required for shutting down the non-accident unit.

* = See last page for status code definition.

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
15 . 0 . 0	0	C	Approved for both units in SER.
15 . 0 . 1		NA	Area not addressed in 1981 Standard Review Plan.
15 . 0 . 2		NA	Area not addressed in 1981 Standard Review Plan.
15 . 1 . 0	0	C	Approved for both units in SER.
15 . 1 . 1		NA	Addressed in 15.2.1
15 . 1 . 2		NA	Addressed in 15.2.1
15 . 1 . 3		NA	Addressed in 15.2.1
15 . 1 . 4		NA	Addressed in 15.2.1
15 . 1 . 5		NA	Addressed in 15.2.1 and 15.4.2.
15 . 2 . 0	0	OT	Approved for both units in SER. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 2 . 1	14	O	In SSER13, NRC reviewed TVA's use of the FACTRAN computer code for LOCA temperature distribution. NRC concluded that the transient analysis was acceptable. In SSER14, NRC approved the trip time delay functional upgrade as part of the Eagle 21 process protection system for low-low steam generator reactor trip. TVA letter dated December 5, 2007, informs NRC of intent to use Eagle-21 for Unit 2. NRC requested additional information December 27, 2007. TVA provided the requested information by letter dated February 28, 2008. By letter dated May 7, 2008, NRC provided a list of specific issues to be addressed in a future amendment application for Eagle-21 for WBN Unit 2. Unit 2 Action: Provide the additional information for NRC review.
15 . 2 . 2	0	C	Approved for both units in SER.
15 . 2 . 3	18	OT	In SSER18, NRC reviewed FSAR amendment 90. In FSAR amendment 90, TVA revised for the transient event of inadvertent ECCS actuation for both Units. TVA provided additional information for both units by letter dated October 12, 1995. In SSER18, NRC found the reanalysis acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
15 . 2 . 4	14	OT	15.2.4.1 Uncontrolled Rod Cluster Assembly Bank Withdrawal from Zero-Power Condition In SSER7, NRC reviewed additional analysis submitted for both units for a two pump, zero power, rod withdrawal. The NRC concluded the revision was acceptable. In SSER13, NRC accepted a change to a limiting condition for operation and bases changes to include a requirement that two reactor coolant pumps should be running whenever rods are capable of withdrawal in Mode 4. Unit 2 Action: Submit Technical Specifications. ---------- 15.2.4.4: OUTSTANDING ISSUE for evaluation of Boron dilution and single failure criteria In a letter dated November 2, 1984, TVA stated that the boron dilution alarm system receives signals from two independent channels which are independently powered. Additionally, testing of these circuits was described. The staff concluded in SSER4 that the system is adequately protected from single failure and closed this item. In SSER14, NRC reviewed a reanalysis of the accident associated with uncontrolled boron dilution and accepted the analysis. ---------- 15.2.4.6 Rod Cluster Control Assembly Ejection In SSER14, NRC accepted a change to the maximum cladding temperature for the rod ejection accident made in FSAR amendment 80. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 2 . 5	4	C	Approved for both units in SER subject to completion of Outstanding Issue in 15.2.4.4.
15 . 2 . 6		NA	Addressed in 15.2.1.
15 . 2 . 7		NA	Addressed in 15.2.1.
15 . 3 . 0	0	C	Approved for both units in SER.
15 . 3 . 1	15	OT	In SSER12, NRC reviewed the reanalysis of small break loss of coolant analysis (SBLOCA) for Units 1 and 2. NRC found the analysis acceptable. In SSER15, NRC reviewed additional changes to the SBLOCA for Units 1 and 2. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 3 . 2	14	OT	In SSER3, NRC reviewed proposed changes to the boron concentration requirement in the Boron Injection Tank and found them acceptable. In SSER14, NRC reviewed TVA application of the new steamline protection feature associated with the Eagle 21 upgrade for WBN Unit 1. The model resulted in the reanalysis of two ruptures: the main feedline and a steamline break outside of containment. Unit 2 Action: Perform analysis. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
15 . 3 . 3	14	OT	In SSER14, NRC reviewed TVA application of the new steamline protection feature associated with the Eagle 21 upgrade for WBN Unit 1. The model resulted in the reanalysis of two ruptures: the main feedline and a steamline break outside of containment. Unit 2 Action: Perform analysis. ---------- Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 3 . 4	14	OT	In SSER14, NRC reviewed this section based on VANTAGE 5H fuel and found it acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 3 . 5	14	OT	In SSER14, NRC reviewed this section based on VANTAGE 5H fuel and found it acceptable. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 3 . 6	12	CI	LICENSE CONDITION - Anticipated Transients Without Scram (Generic Letter 83-28 Item 4.3) In SSER3, NRC performed an initial review of Generic Letter 83-28 for the Salem anticipated transients without scram events. A new license condition was established for GL 83-28 Item 4.3. In SSER5, the staff found TVA's response to a number of items in GL 83-28 acceptable, including Item 4.3, and thus eliminated this license condition. In a letter dated June 18, 1990, for both units, NRC confirmed that all issues under Item 4.3 were fully resolved. In SSER6, NRC continued the review. In SSER10, NRC completed the review of TVA's submittals for GL 83-28 and found them acceptable. In SSER11, a reference to Item 4.3 that was omitted in SSER 10 was added. In SSER12, NRC provided additional information on Items 3.1.3 and 3.2.3. NRC noted that TVA reported that there would be no post maintenance test requirements in the Technical Specifications for either the reactor trip system or other safety related components which could degrade safety. The NRC had no further concerns. CI in May 28 letter.
15 . 3 . 7	0	C	Approved for both units in SER.
15 . 4 . 0	0	C	Approved for both units in SER.
15 . 4 . 1	18	OT	In SSER5, NRC reviewed a change to the estimated fractions in leakage pathways for the release of radioactive material following a LOCA. In SSER9, NRC corrected the filter efficiehcy for organic iodine. The conclusions reached in the SER and supplements remained unchanged. In SSER15, NRC reviewed revised short term atmospheric relative concentration factors. The conclusions reached in the SER and supplements remained unchanged. In FSAR amendment 90, TVA increased the amount of leakage that enters the auxiliary building following a LOCA. In SSER18, NRC confirmed this was within the guidelines of 10 CFR Part 100. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 4 . 2	15	OT	In SSER15, NRC reviewed revised short term atmospheric relative concentration factors. The conclusions reached in the SER and supplements remained unchanged. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
15 . 4 . 3	15	OT	LICENSE CONDITION – Steam Generator tube rupture In SSER2, NRC performed an initial evaluation of an actual Steam Generator Tube Rupture (SGTR) that occurred at Ginna. As part of the Westinghouse Owners Group (WOG), WBN committed to implement all corrective actions recommended by the WOG. In SSER5, NRC reviewed the WOG SGTR analysis and determined that plant specific information was required. In SSER12, the staff identified 5 items that required resolution involving 1) operator action times; 2) radiation offsite consequence analysis; 3) systems, 4) associated components credited for accident mitigation in SG tube rupture emergency operating procedures; and 5) system compatibility with bounding analysis. Items 2-5 were resolved in SSER12. In SSER14, the staff stated that a revised SG tube rupture analysis was more conservative and did not alter the conclusions of their Original safety evaluation. With regard to operator response times, TVA letters dated April 21, 1994, and August 15, 1994, and NRC letter dated June 28, 1994, dealt with simulator runs to address response times and operator performance during simulated SG tube ruptures. The staff concluded, after review of the TVA letters, that the times assumed in the tube rupture analysis were satisfactorily verified and deleted this condition. In SSER15, NRC reviewed revised short term atmospheric relative concentration factors. The conclusions reached in the SER and supplements remained unchanged. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 4 . 4	15	OT	In SSER15, NRC reviewed revised short term atmospheric relative concentration factors. The conclusions reached in the SER and supplements remained unchanged. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 4 . 5	15	OT	In SSER4, NRC reevaluated the consequences of a fuel handling accident inside primary containment. NRC concluded WBN met the relevant requirements of GDC 61. In SSER15, NRC reviewed revised short term atmospheric relative concentration factors. The conclusions reached in the SER and supplements remained unchanged. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 4 . 6	0	OT	Approved for both units in SER. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 4 . 7	0	OT	Approved for both units in SER. Unit 2 action: Use Westinghouse RFA-2 fuel as currently installed in Unit 1 for the initial cycle.
15 . 5 . 0	0	C	Approved for both units in SER.
15 . 5 . 1	4	C	LICENSE CONDITION – Effect of high pressure injection for small beak LOCA with no auxiliary feedwater (NUREG-0737, II.K.2.13) In SSER4, the staff concluded that there was reasonable assurance that vessel integrity would be maintained for small breaks with an extended loss of all feedwater and that the USI A-49, "Pressurized Thermal Shock," review did not have to be completed to support the full-power license. NRC considered this condition resolved. C in NRC May 28, 2008 letter.
15 . 5 . 2	4	C	LICENSE CONDITION – Voiding in the reactor coolant system (NUREG-0737, II.K.2.17) The staff reviewed the generic resolution of this license condition in SSER4 and approved the study in question, thereby resolving this license condition.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
15 . 5 . 3	5	C	LICENSE CONDITION – PORV isolation system (NUREG-0737, II.K.3.1, II.K.3.2) NUREG-0737, II.K.3.1, II.K.3.2, "Auto PORV Isolation/Report on PORV Failures" - Reviewed in SSER5 and resolved based on NRC conclusion that there is no need for an automatic PORV isolation system (NRC letter dated June 29, 1990). C in NRC May 28, 2008 letter.
15 . 5 . 4	16	CI	"Implementation of TMI Item II.K.3.5 (Automatic Trip of Reactor Coolant Pumps" – Reviewed in 15.5.4 of original 1982 SER; became License Condition 35. The staff determined that their review of Item II.K.3.5 did not have to be completed to support the full power license and considered this license condition resolved in SSER4. The item was further reviewed in Appendix EE of SSER16. CI in NRC May 28, 2008 letter. Unit 2 Action: Implement modifications as required.
15 . 5 . 5	16	CI	NUREG-0737, II.K.3.30, "Small Break LOCA Methods" and NUREG-0737, II.K.3.31, "Plant Specific Analysis" – The staff determined that their review of Items II.K.3.30 and II.K.3.31 did not have to be completed to support the full-power license and considered this LICENSE CONDITION resolved in SSER4. In SSER5, the staff further reviewed responses to these items, and concluded that the Units 1 and 2 FSAR methods and analysis met the requirements of II.K.3.30 and II.K.3.31. This item was further reviewed in Appendix EE of SSER16. Both of these items were CI in NRC May 28, 2008 letter. Unit 2 Action: Complete analysis for Unit 2.
15 . 6 . 0	0	C	Approved for both units in SER.
15 . 6 . 1	0	C	Approved for both units in SER.
16 . 0 . 0		OT	Unit 2 Action: Submit Technical Specifications.
16 . 1 . 0		NA	Area not addressed in 1981 Standard Review Plan.
17 . 0 . 0	0	C	Approved for both units in SER.
17 . 1 . 0	0	C	Approved for both units in SER. See 17.3.
17 . 2 . 0	0	C	Approved for both units in SER. See 17.3.
17 . 3 . 0	15	C	OUTSTANDING ISSUE - QA program The staff reviewed the description of the QA program in SSER2 and stated that they had resolved the list of open items for which the QA program for the operations phase applies with TVA and concluded that the description was in compliance with NRC regulations. The staff reviewed the organization for the QA program and the NQA Plan, and presented their conclusions in SSER5. They concluded that the program was acceptable for the operations phase of Watts Bar. It was noted, however, that Amendment 63 stated that identification of safety related features would be addressed later and the staff left the outstanding issue unresolved. In SSER10, the staff reviewed additional revisions to the QA program and stated that they did not change the staff's conclusions reached in SSER5. In SSER13, the staff concluded that TVA had established appropriate programmatic controls for identification of safety related features and considered this issue resolved. In SSER15, the staff listed additional revisions to the QA program without comment.
17 . 4 . 0	0	C	Approved for both units in SER. See 17.3.
17 . 5 . 0		NA	Area not addressed in 1981 Standard Review Plan.

*** = See last page for status code definition.**

SER SECTION	SSER #	*	ADDITIONAL INFORMATION
17 . 6 . 0		OV	10 CFR 50.65– Maintenance Rule Unit 2 Action: Implement Maintenance Rule for Unit 2 systems 1 month prior to fuel load
18 . 0 . 0	0	NA	See 18.1.
18 . 1 . 0	16	OV	NUREG-0737, I.D.1, "Control Room Design Review" - NRC reviewed in SSER5, SSER6, SSER15, and Appendix EE of SSER16. In SSER6, the staff concluded that the DCRCR program implemented for Unit 1 satisfied the programmatic requirements of Supplement 1, NUREG-0737. In SSER15, the staff conducted a final onsite audit of the Unit 1 DCRDR and concluded that the product implemented conformed to the DCRDR requirements of Supplement 1, NUREG-0737 and that the DCRDR special program had been effectively implemented. In SSER16, the staff reviewed a TVA reclassification of a human engineering deficiency and concluded that it was satisfactory. Unit 2 Actions: Complete the CRDR process. Perform rewiring in accordance with ECN 5982. Take advantage of the completed Human Engineering reviews to ensure appropriate configuration for Unit 2 control panels. See CRDR Special Program.
18 . 2 . 0	16	O	"CONCLUSIONS" left open until all items in subsection are closed.

STATUS CODE DEFINITIONS

C: CLOSED: Previous staff review of NUREG-0847 and/or supplements has closed the item either for both units at WBN or explicitly for WBN Unit 2.

CI: CLOSED/IMPLEMENTATION: Staff has approved either for both units at WBN or explicitly for WBN Unit 2; there is no change to the approved design; and implementation is recommended through Regional Inspection.

CT: CLOSED/TECHNICAL SPECIFICATIONS: Item has been approved either for both units at WBN or explicitly for WBN Unit 2; however, a change to the original approval requires submittal of the Technical Specifications and staff review.

NA: NOT APPLICABLE: Justification as to why a section / subsection is not applicalbe is provided in the ADDITIONAL INFORMATION column.

O: OPEN: No action or documentation is provided that shows the staff has reviewed the item for WBN Unit 2.

OT: OPEN/TECHNICAL SPECIFICATIONS: No action or documentation is provided that shows the staff has reviewed the item for WBN Unit 2, and the resolution is through submittal of a Technical Specification.

OV: OPEN/VALIDATION: The proposed approach has been approved for Watts Bar Unit 1; the same approach is proposed for use on WBN Unit 2 without change.

*** = See last page for status code definition.**

Attachment 2

List of Unit 1 Exemptions, Reliefs, and Other Actions

Attachment
WBN Unit 2 Exemptions, Code Relief, Deviations and Exceptions

Exemption: 10 CFR 50 Appendix J Section III.D.2(b)(ii) for Airlock Leak Testing at pressure Pa before establishing containment integrity if air lock maintenance had been performed that could have affected the airlock sealing capability

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Exemption: 10 CFR 70.24 for Criticality Monitoring

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Exemption: 10 CFR 73.55 (c) (10) for surface vehicle bomb rule

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Attachment
WBN Unit 2 Exemptions, Code Relief, Deviations and Exceptions

Exemption: 10 CFR 73.55 related to returning contractor picture badges upon exit from the protected area

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Exemption: 10 CFR 50 Appendix E for State participation in emergency planning exercise

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Attachment
WBN Unit 2 Exemptions, Code Relief, Deviations and Exceptions

ASME Code Relief: ASME Code Section III, subsection NC/ND requirements concerning installation of block valves in safety/relief valve discharge lines

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-Table 3.2-2a Note 8

Approval Reference: NRC letter dated February 22, 1993, "Watts Bar Nuclear Plant – Relief from Certain ASME Code Section III, Subsection NC/ND Requirements"

Justification: Manual block valves exist in the discharge piping of the relief valves that provide overpressure protection for the volume control tank, the boron injection tank and the waste gas compressors. The present arrangement allows isolation of either holdup tank for maintenance or removal of the holdup tank relief valve for testing and / or maintenance. Because this is a common system to both units, either holdup tank is available to support continuous operation when one valve is closed. With the present arrangement, there are administrative controls in place to ensure the locked open position of at least one valve and flow path at all times.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

ASME Code Relief: ASME Code Section III, subsection NB-2000 use of alternative acceptance for pipe fittings supplied by Tube-Line Corporation.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-Table 3.2-2a Note 4

Approval Reference: NRC letter dated September 23, 1991, "Watts Bar Nuclear Plant, Units 1 and 2 - Relief from ASME Code Section III, Subsection NB-2000"

Justification: The fittings are installed in the Essential Raw Cooling Water (ERCW) system. The ERCW system is a common system for both units and is in service to support WBN Unit 1 operation.

Other Actions: None

Attachment
WBN Unit 2 Exemptions, Code Relief, Deviations and Exceptions

Deviation: Regulatory Guide 1.68 to not perform cold no-flow, cold full-flow and hot no-flow rod drop testing

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: No

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 5 (approved for Unit 1 only)

Justification: TVA does not intend to request a similar deviation for WBN Unit 2.

Other Actions: NA

Exceptions: Regulatory Guide 1.68

Applicable to WBN Unit 2: To be determined

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91 Chapter 14

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 14

Justification: To be provided at a later date. TVA is in the process of developing the Initial Test Program for WBN Unit 2. As part of the process, TVA will evaluate the exceptions to RG 1.68 used for the Initial Test Program for WBN Unit 1 and determine those that remain valid.

Other Actions: Not applicable at this time.

Attachment
WBN Unit 2 Exemptions, Code Relief,
Deviations and Exceptions

Deviation: Standard Review Plan 9.5.1 for use of Steam Generator saturation temperature T-sat instead of T-cold for assessing natural circulation in the auxiliary control room.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Yes

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 7

Justification: For operational fidelity between the units it is desirable that the instrumentation in the common auxiliary control room be the same for both WBN units.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Exceptions: Regulatory Guide 1.97 Post Accident Monitoring

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-Table 7.5-2

Approval Reference: Technical Evaluation report attached to NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, Supplemental SER 9

Justification: The exceptions to RG 1.97 are typically differences in instrument ranges or the category of instrumentation. For operational fidelity between the units it is desirable that the ranges of the instrumentation in the control rooms and the auxiliary control room be the same for both WBN units.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Attachment
WBN Unit 2 Exemptions, Code Relief, Deviations and Exceptions

Deviation: NUREG-0737, Item II.F.2 guidance for Inadequate Core Cooling system for channel separation criteria inside the reactor cavity biological shield wall.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-7.7.1.9.1

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 10

Justification: Design limitations of the core thermocouples within the reactor cavity do not allow for channel separation to satisfy RG 1.97 requirements. Exceptions to minimum separation requirements for the Reactor Vessel Level Instrumentation system exist at the instrumentation taps at the reactor vessel upper head and at the seal table. The exceptions to the design criteria have been evaluated and do not expose the system to additional risk.

Other Actions: None

Deviation: IEEE Standard 279 -1971 requirement that manual initiation be provided for each protective action at the system level.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-7.3.2.2.6

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 14.

Justification: Manual initiation of both steamline isolation and switchover from injection to recirculation following a loss-of-primary-coolant accident are performed at the component level only. For operational fidelity between the units it is desirable that the operator actions required following an accident be the same for both WBN units.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Attachment
WBN Unit 2 Exemptions, Code Relief,
Deviations and Exceptions

Deviation: Regulatory Guide 1.118, Periodic Testing of Electric Power and Protection Systems to use jumpers on a limited basis for testing of Eagle-21 equipment and testing of electric power systems.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-Table 7.1-1

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 16.

Justification: Where feasible test switches or other necessary equipment will be installed permanently to minimize the use of temporary jumpers in testing.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Deviation: Regulatory Guide 1.75, Physical Independence of Electrical Systems pertaining to electrical separation for divisional open cable trays (including cable in free air) and conduits.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-Table 7.1-1

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 16

Justification: RG 1.75 was issued after the Watts Bar design was completed. Separation criteria for WBN Units 1 and 2 are given in FSAR section 8.3.1.4.2. Electric cable trays, wireways and conduit were installed using this criterion.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Attachment
WBN Unit 2 Exemptions, Code Relief,
Deviations and Exceptions

Deviations: Staff Fire Protection Guidance in the following areas:

- Required instrumentation for Alternative Shutdown
- Noncombustible Radiant Energy Heat Shields
- Intervening Combustibles
- Partial Firewall between Component Cooling Water System Pumps
- Openings in Fire Barriers
- Emergency Lighting
- Lack of Total Area Suppression and Detection
- Deviations to BTP 9.5-1 Appendix A

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Yes

Approval Reference: NUREG 0847 Safety Evaluation Report related to the operation of Watts Bar Nuclear Plant Units 1 and 2, SER Supplement 18 and 19.

Justification: WBN Unit 2 was designed and constructed to be identical to WBN Unit 1. The deviations were reviewed for both units and evaluated to be acceptable.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Alternate acceptance: Visual Examination during ASME Section III hydrostatic pressure testing for penetrations having inaccessible vendor welds

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: No

Approval Reference: NRC Inspection Report 50-390/391-90-04 dated May 17, 1990 (Approval for Unit 1)

Justification: TVA intends to request a similar alternate acceptance for WBN Unit 2.

Other Actions: Not applicable at this time

Attachment
WBN Unit 2 Exemptions, Code Relief,
Deviations and Exceptions

Alternate acceptance: Criteria for the pneumatic test for the Control Air System.

Applicable to WBN Unit 2: No

Approved for WBN Unit 2: NA

Approval Reference: NA

Justification: NA

Other Actions: NA

Alternate acceptance: Criteria for the welds on the drain line vortex for the Refueling Water Storage Tanks.

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-9.2.7

Approval Reference: NRC Inspection Report 50-390/391-90-04 dated May 17, 1990

Justification: The WBN Unit 2 Refueling Water Storage Tank is installed and the welds on the drain line vortex are inaccessible for radiography.

Other Actions: None

Alternate acceptance: Criteria for material procured prior to the initiation of the Acceptable Suppliers List (approximately May 1978)

Applicable to WBN Unit 2: Yes

Approved for WBN Unit 2: Watts Bar Final Safety Analysis Report – Revision 91-3.2.3.2

Approval Reference: NRC Inspection Report 50-390/391-90-02 dated March 15, 1990

Justification: Material procured prior to the initiation of the Acceptable Suppliers List is acceptable for use assuming all other attributes of the material and the documentation conform to ASME Code requirements.

Other Actions: Additional WBN Unit 2 implementing procedure, and/or other activity required for completion.

Attachment 3

Generic Issue Resolution

GENERIC COMMUNICATIONS
MASTER TABLE

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 71-001	Involves Main Steam Isolation Valves	NA	Boiling Water Reactor
B 71-002	PWR Reactor Trip Circuit Breakers	NA	Addressed to specific plant(s).
B 71-003	Catastrophic Failure of Main Steam Line Relief Valve Headers	NA	Addressed to specific plant(s).
B 72-001	Failed Hangers for Emergency Core Cooling System Suction Header	NA	Addressed to specific plant(s).
B 72-002	Simultaneous Actuation of a Safety Injection Signal on Both Units of a Dual Unit Facility	NA	Addressed to specific plant(s).
B 72-003	Limitorque Valve Operator Failures	NA	Addressed to specific plant(s).
B 73-001	Faulty Overcurrent Trip Delay Device in Circuit Breakers for Engineered Safety Systems	C	TVA: letter dated April 4, 1973 NRC: IR 390/391 75-5
B 73-002	Malfunction of Containment Purge Supply Valve Switch	C	TVA: letter dated August 22, 1973 NRC: IR 390/391 75-5
B 73-003	Defective Hydraulic Snubbers and Restraints	C	TVA: letter dated February 7, 1985 NRC: IR 390/391 85-08
B 73-004	Defective Bergen-Patterson Hydraulic Shock Absorbers	C	TVA: memo dated February 7, 1985 NRC: IR 390/391 85-08
B 73-005	Manufacturing Defect in BWR Control Rods	NA	Boiling Water Reactor
B 73-006	Inadvertent Criticality in a BWR	NA	Boiling Water Reactor
B 74-001	Valve Deficiencies	C	TVA: letter dated April 15, 1974 NRC: IR 390/391 75-5
B 74-002	Truck Strike Possibility	NA	Info
B 74-003	Failure of Structural or Seismic Support Bolts on Class I Components	CI	TVA: memo dated January 22, 1985 NRC: IR 390/391 85-08 ---------- Approach accepted in IR 50-390/85-08 and 50-391/85-08 (March 29, 1985). Unit 2 Action: Implement per NUREG-0577 as was done for Unit 1.
B 74-004	Malfunction of Target Rock Safety Relief Valves	NA	Boiling Water Reactor
B 74-005	Shipment of an Improperly Shielded Source	NA	Does not apply to power reactor.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 74-006	Defective Westinghouse Type W-2 Control Switch Component	C	TVA: letter dated October 18, 1974 NRC: IR 390/391 75-6
B 74-007	Personnel Exposure – Irradiation Facility	NA	Does not apply to power reactor.
B 74-008	Deficiency in the ITE Molded Case Circuit Breakers, Type HE-3	C	TVA: letter dated August 21, 1974 NRC: IR 390/391 75-5
B 74-009	Deficiency in GE Model 4KV Magne-Blast Circuit Breakers	C	TVA: letter dated September 20, 1974 NRC: IR 390/391 76-6
B 74-010	Failures in 4-Inch Bypass Pipe at Dresden 2	NA	Boiling Water Reactor
B 74-011	Improper Wiring of Safety Injection Logic at Zion 1 & 2	C	NRC: IR 390/391 75-6
B 74-012	Incorrect Coils in Westinghouse Type SG Relays at Trojan	C	NRC: IR 390/391 75-5
B 74-013	Improper Factory Wiring on GE Motor Control Centers at Fort Calhoun	C	TVA: letter dated December 24, 1974 NRC: IR 390/391 75-5
B 74-014	BWR Relief Valve Discharge to Suppression Pool	NA	Boiling Water Reactor
B 74-015	Misapplication of Cutler-Hammer Three Position Maintained Switch Model No. 10250T	CI	TVA: letter dated May 5, 1975 NRC: IR 390/391 75-5 ---------- Unit 2 Action: Install modified A3 Cutler-Hammer 10250T switches.
B 74-016	Improper Machining of Pistons in Colt Industries (Fairbanks-Morse) Diesel-Generators	C	TVA: letter dated January 2, 1975 NRC: IR 390/391 75-3
B 75-001	Through-Wall Cracks in Core Spray Piping at Dresden-2	NA	Boiling Water Reactor
B 75-002	Defective Radionics Radiograph Exposure Devices and Source Changers	NA	Does not apply to power reactor.
B 75-003	Incorrect Lower Disc Spring and Clearance Dimension in Series 8300 and 8302 ASCO Solenoid Valves	CI	TVA: letter dated May 16, 1975 NRC: IR 390/391 75-6 ---------- NRC accepted in IR 50-390/75-6 and 50-391/75-6 (August 21, 1975). Unit 2 Action: Modify valves not modified at factory.
B 75-004	Cable Fire at BFNPP	CI	NRC: IR 390/391 85-08 Closed to Fire Protection CAP ---------- Part of Fire Protection CAP

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 75-005	Operability of Category I Hydraulic Shock and Sway Suppressors	CI	TVA: letter dated June 16, 1975 NRC: IR 390/391 75-6 ---------- NRC accepted in IR 50-390/75-6 and 50-391/75-6 (August 21, 1975). Unit 2 Action: Install proper suppressors.
B 75-006	Defective Westinghouse Type OT-2 Control Switches	CI	TVA: letter dated July 31, 1975 NRC: IR 390/85-25 and 391/85-20 ---------- Unit 2 Action: Inspect Westinghouse Type OT-2 control switches. [WAS "NOTE 3."]
B 75-007	Exothermic Reaction in Radwaste Shipment	NA	Does not apply to power reactor.
B 75-008	PWR Pressure Instrumentation	CT	NRC: IR 390/391 85-08 ---------- Unit 2 Action: Ensure that Technical Specifications and Site Operating Instructions address importance of maintaining temperature and pressure within prescribed limits.
B 76-001	BWR Isolation Condenser Tube Failure	NA	Boiling Water Reactor
B 76-002	Relay Coil Failures – GE Types HFA, HGA, HKA, HMA Relays	CI	Unit 2 Action: Repair or replace relays before preoperational tests.
B 76-003	Relay Malfunctions – GE Type STD Relays	C	TVA: letter dated May 17, 1976 NRC: IR 390/391 76-6
B 76-004	Cracks in Cold Worked Piping at BWRs	NA	Boiling Water Reactor
B 76-005	Relay Failures – Westinghouse BFD Relays	C	TVA: letter dated June 7, 1976 NRC: IR 390/391 85-08
B 76-006	Diaphragm Failures in Air Operated Auxiliary Actuators for Safety/Relief Valves	C	TVA: memo dated January 25, 1985 NRC: IR 390/391 85-08
B 76-007	Crane Hoist Control Circuit Modifications	C	TVA: letter dated October 29, 1976 NRC: IR 390/391 85-08
B 76-008	Teletherapy Units	NA	Does not apply to power reactor.
B 77-001	Pneumatic Time Delay Relay Setpoint Drift	C	TVA: letter dated July 1, 1977 NRC: IR 390/391 85-08
B 77-002	Potential Failure Mechanism in Certain Westinghouse AR Relays with Latch Attachments	C	TVA: letter dated November 11, 1977 NRC: IR 390/391 85-08

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 77-003	On-Line Testing of the Westinghouse Solid State Protection System	CI	Unit 2 Action: Include necessary periodic testing in test procedures.
B 77-004	Calculation Error Affecting The Design Performance of a System for Controlling pH of Containment Sump Water Following a LOCA	CT	TVA: letter dated January 23, 1978 NRC: IR 390/78-11 and 391/78-09 ---------- Unit 2 Action: Ensure Technical Specifications Includes limit on Boron concentration.
B 77-005 and B 77-005 A	Electrical Connector Assemblies	C	TVA: letter dated January 17, 1978 NRC: IR 390/78-11 and 391/78-09
B 77-006	Potential Problems with Containment Electrical Penetration Assemblies	C	Item was applicable only to units with operating license at the time the item was issued. ---------- NRC: IR 390/391 85-08
B 77-007	Containment Electrical Penetration Assemblies at Nuclear Power Plants Under Construction	C	TVA: letter dated January 20, 1978 NRC: IR 390/78-11 and 391/78-09
B 77-008	Assurance of Safety and Safeguards During an Emergency – Locking Systems	C	Item concerns a multi-unit issue that was completed for both units. ---------- TVA: letter dated March 1, 1978 NRC: IR 390/78-11 and 391/78-09
B 78-001	Flammable Contact – Arm Retainers in GE CR120A Relays	C	TVA: letter dated March 20, 1978 NRC: IR 390/78-11 and 391/78-09
B 78-002	Terminal Block Qualification	C	TVA: letter dated March 1, 1978 NRC: IR 390/78-11 and 391/78-09
B 78-003	Potential Explosive Gas Mixture Accumulations Associated with BWR Offgas System Operations	NA	Boiling Water Reactor
B 78-004	Environmental Qualification of Certain Stem Mounted Limit Switches Inside Reactor Containment	CI	TVA: letter dated December 19, 1978 NRC: IR 390/82-13 and 391/82-10 Closed to EQ Program ---------- IR 50-390/82-13 and 50-391/82-10 (April 22, 1982) accepted approach. Unit 2 Action: Ensure NAMCO switches have been replaced.
B 78-005	Malfunctioning of Circuit Breaker Auxiliary Contact Mechanism – GE Model CR105X	C	TVA: letter dated June 12, 1978 NRC: IR 390/78-17 and 391/78-15

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 78-006	Defective Cutler-Hammer Type M Relays With DC Coils	C	NRC: IR 390/78-22 and 391/78-19
B 78-007	Protection Afforded by Air-Line Respirators and Supplied-Air Hoods	NA	Item was applicable only to units with operating license at the time the item was issued.
B 78-008	Radiation Levels from Fuel Element Transfer Tubes	NA	Item was applicable only to units with operating license at the time the item was issued. ---------- NRC: IR 390/391 85-08
B 78-009	BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures	NA	Boiling Water Reactor
B 78-010	Bergen-Patterson Hydraulic Shock Suppressor Accumulator Spring Coils	C	TVA: letter dated August 14, 1978 NRC: IR 390/78-22 and 391/78-19
B 78-011	Examination of Mark I Containment Torus Welds	NA	Boiling Water Reactor
B 78-012	Atypical Weld Material in Reactor Pressure Vessel Welds	C	TVA: Westinghouse letter dated October 29, 1979 NRC: IR 390/391 81-04
B 78-013	Failures in Source Heads Kay Ray, Inc. Gauges Models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061 and 7061B	NA	Does not apply to power reactor.
B 78-014	Deterioration of Buna-N Components in ASCO Solenoids	NA	Boiling Water Reactor
B 79-001	Environmental Qualification of Class 1E Equipment	C	NRC: IR 390/80-06 and 391/80-05
B 79-002	Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts	CI	NRC review of HAAUP Program in NUREG-1232, SSER6, and SSER8. Unit 2 Actions: Addressed in CAP/SP. Conduct a complete review of affected support calculations, and perform the necessary revisions to design documents and field modifications to achieve compliance.
B 79-003	Longitudinal Weld Defects in ASME SA-312 Type 304 SS Pipe Spools Manufactured by Youngstown Welding & Engineering	C	TVA: letter dated July 16, 1981 NRC: IRs 390/82-21 and 391/82-17; 390/84-35 and 391/84-33
B 79-004	Incorrect Weights for Swing Check Valves Manufactured by Velan Engineering Corporation	C	TVA: letter dated October 20, 1980 NRC: IR 390/83-15 and 391/83-11
B 79-005	Nuclear Incident at TMI	NA	Applies only to Babcock and Wilcox designed plants
B 79-006	Review of Operational Errors and System Misalignments Identified During the Three Mile Island Incident	C	NRC: IR 390/80-06 and 391/80-05
B 79-007	Seismic Stress Analysis of Safety-Related Piping	C	TVA: letter dated May 31, 1979 NRC: IR 390/79-30 and 391/79-25

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 79-008	Events Relevant to BWRs Identified During TMI Incident	NA	Boiling Water Reactor
B 79-009	Failure of GE Type AK-2 Circuit Breaker in Safety Related Systems	CI	TVA: letter dated June 20, 1979 --- Unit 2 Action: Complete preservice preventive maintenance on AK-2 Circuit Breakers. [WAS "NOTE 3."]
B 79-010	Requalification Training Program Statistics	NA	Item was applicable only to units with operating license at the time the item was issued.
B 79-011	Faulty Overcurrent Trip Device in Circuit Breakers for Engineering Safety Systems	C	TVA: letter dated July 20, 1979 NRC: IR 390/79-30 and 391/79-25
B 79-012	Short Period Scrams at BWR Facilities	NA	Boiling Water Reactor
B 79-013	Cracking in Feedwater Piping	C	Item was applicable only to units with operating license at the time the item was issued. --- TVA: letter dated December 1, 1983 NRC: IR 390/391 85-08
B 79-014	Seismic Analysis for As-Built Safety-Related Piping Systems	CI	NRC review of HAAUP Program in NUREG-1232, SSER6, and SSER8. Unit 2 Actions: Addressed in CAP/SP. Initiate a Unit 2 hanger walkdown and hanger analysis program similar to the program for Unit 1. Complete re-analysis of piping and associated supports as necessary. Perform modifications as required by re-analysis.
B 79-015	Deep Draft Pump Deficiencies	C	TVA: letter dated January 24, 1992 NRC: IR 390/391 95-70
B 79-016	Vital Area Access Controls	NA	Item was applicable only to units with operating license at the time the item was issued. --- NRC: IR 390/80-06 and 391/80-05
B 79-017	Pipe Cracks in Stagnant Borated Water Systems at PWR Plants	NA	Item was applicable only to units with operating license at the time the item was issued. NRC: IR 390/80-06 and 391/80-05; NUREG/ CR 5286
B 79-018	Audibility Problems Encountered on Evacuation of Personnel from High-Noise Areas	NA	Item was applicable only to units with operating license at the time the item was issued. --- NRC: IR 390/80-06 and 391/80-05

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 79-019	Packaging of Low-Level Radioactive Waste for Transport and Burial	NA	Item was applicable only to units with operating license at the time the item was issued. ---------- NRC: IR 390/80-06 and 391/80-05
B 79-020	Packaging, Transport and Burial of Low-Level Radioactive Waste	NA	Item was applicable only to units with operating license at the time the item was issued. ---------- NRC: IR 390/80-06 and 391/80-05
B 79-021	Temperature Effects on Level Measurements	CI	Reviewed in 7.2.5 of both the original 1982 SER and SSER14. Unit 2 Action: Update accident calculation. ---------- CONFIRMATORY ISSUE - address IEB 79-21 to alleviate temperature dependence problem associated with measuring SG water level In SSER14, NRC concurred with TVA's assessment to not insulate the steam generator water level instrument reference leg. Unit 2 Action: Update accident calculation.
B 79-022	Possible Leakage of Tubes of Tritium Gas Used in Time Pieces for Luminosity	NA	Does not apply to power reactor. ---------- NRC: IR 390/80-06 and 391/80-05
B 79-023	Potential Failure of Emergency Diesel Generator Field Exciter Transformer	C	TVA: letter dated October 29, 1979 NRC: IR 390/80-06 and 391/80-05
B 79-024	Frozen Lines	CI	Unit 2 Actions: Insulate the section of piping in the containment spray full-flow test line that is exposed to outside air. Confirm installation of heat tracing on the sensing lines off the feedwater flow elements.
B 79-025	Failures of Westinghouse BFD Relays in Safety-Related Systems	C	TVA: letter dated January 4, 1980 NRC: IR 390/80-03 and 391/80-02
B 79-026	Boron Loss from BWR Control Blades	NA	Boiling Water Reactor
B 79-027	Loss of Non-Class 1E I & C Power System Bus During Operation	CI	TVA responded to the Bulletin on March 1, 1982. Reviewed in 7.5.3 of the original 1982 SER. Unit 2 Action: Issue appropriate emergency procedures.
B 79-028	Possible Malfunction of NAMCO Model EA180 Limit Switches at Elevated Temperatures	C	TVA: letter dated April 1, 1993 NRC: IR 390/391 93-32
B 80-001	Operability of ADS Valve Pneumatic Supply	NA	Boiling Water Reactor
B 80-002	Inadequate QA for Nuclear Supplied Equipment	NA	Boiling Water Reactor

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 80-003	Loss of Charcoal from Standard Type II, 2 Inch, Tray Adsorber Cells	C	TVA: letter dated March 21, 1980 NRC: IR 390/80-15 and 391/80-12
B 80-004	Analysis of a PWR Main Steam Line Break with Continued Feedwater Addition	CI	IR 50-390/85-60 and 50-391/85-49 (December 6, 1985) required completion of actions that included determination of temperature profiles inside and outside of containment following a MSLB for Unit 1. Unit 2 Action: Complete analysis for Unit 2.
B 80-005	Vacuum Condition Resulting in Damage to Chemical Volume Control System Holdup Tanks	CI	Closed in IR 50-390/84-59 and 50-391/84-45. Unit 2 Action: Complete surveillance procedures for Unit 2.
B 80-006	Engineered Safety Feature Reset Control	CI	TVA response dated March 11, 1982. Reviewed in 7.3.5 of the original 1982 SER. Unit 2 Action: Perform verification during the preoperational testing.
B 80-007	BWR Jet Pump Assembly Failure	NA	Boiling Water Reactor
B 80-008	Examination of Containment Liner Penetration Welds	C	TVA: letter dated July 8, 1980 NRC: IR 390/391 81-19
B 80-009	Hydramotor Actuator Deficiencies	C	TVA: letter dated January 15, 1981 NRC: NUREG/ CR 5291; IR 390/391 85-08; IR 390/85-60 and 391/85-49
B 80-010	Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment	CI	Unit 2 Actions: 2) Include proper monitoring of non-radioactive systems in procedures.
B 80-010	Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment	CI	Unit 2 Actions: 1) Correct deficiencies involving monitoring of systems.
B 80-011	Masonry Wall Design	CI	NRC accepted all but completion of corrective actions in IR 50-390/93-01 and 50-391/93-01(February 25, 1993) and closed for Unit 1 in IR 50-390/95-46 (August 1, 1995). Unit 2 Action: Complete implementation for Unit 2.
B 80-012	Decay Heat Removal System Operability	CI	NRC: IR 390/391 85-08; NUREG/CR 4005 ---------- Unit 2 Action: Implement operating instructions and abnormal operating instructions (AOIs) for RHR. [WAS "NOTE 3."]
B 80-013	Cracking in Core Spray Spargers	NA	Boiling Water Reactor
B 80-014	Degradation of Scram Discharge Volume Capability	NA	Boiling Water Reactor

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 80-015	Possible Loss of Emergency Notification System with Loss of Offsite Power	C	Item concerns a multi-unit issue that was completed for both units. ---------- NRC: IR 390/391 85-08
B 80-016	Potential Misapplication of Rosemount, Inc. Models 1151 and 1152 Pressure Transmitters With Either "A" or "D" Output Codes	C	TVA: letter dated August 29, 1980 NRC: IR 390/391 81-17
B 80-017	Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR	NA	Boiling Water Reactor
B 80-018	Maintenance of Adequate Minimum Flow Thru Centrifugal Charging Pumps Following Secondary Side High Energy Rupture	CI	IR 50-390/85-60 and 50-391/85-49 (Unit 1) Unit 2 Action: Implement design and procedure changes.
B 80-019	Mercury-Wetted Matrix Relay in Reactor Protective Systems of Operating Nuclear Power Plants Designed by CE	C	TVA: letter dated September 4, 1980 NRC: NUREG/CR 4933; IR 390/391 81-17
B 80-020	Failure of Westinghouse Type W-2 Spring Return to Neutral Control Switches	CI	Unit 2 Action: Modify switches.
B 80-021	Valve Yokes Supplied by Malcolm Foundry Co., Inc.	C	TVA: letter dated May 6, 1981 NRC: 390/391 85-08
B 80-022	Automation Industries, Model 200-520-008 Sealed-Source Connectors	NA	Does not apply to power reactor.
B 80-023	Failures of Solenoid Valves Manufactured by Valcor Engineering Corporation	C	TVA: letter dated March 31, 1981 NRC: IR 390/391 81-17; NUREG/CR 5292
B 80-024	Prevention of Damage Due to Water Leakage Inside Containment (10/17/80 Indian Point 2 Event)	CI	Unit 2 Action: Confirm that the reactor cavity can not be flooded, resulting in the partial or total submergence of the reactor vessel unnoticed by the reactor operators.
B 80-025	Operating Problems with Target Rock Safety-Relief Valves at BWRs	NA	Boiling Water Reactor
B 81-001	Surveillance of Mechanical Snubbers	NA	NRC: IR 390/391 81-17
B 81-002	Failure of Gate Type Valves to Close Against Differential Pressure	C	TVA: letter dated September 30, 1983 NRC: IR 390/391 84-03
B 81-003	Flow Blockage of Cooling Water to Safety System Components by Asiatic Clams and Mussels	C	TVA: letters dated July 21, 1981 and March 21, 1983 NRC: IR 390/391 81-17
B 82-001	Alteration of Radiographs of Welds in Piping Subassemblies	C	NRC: IR 390/391 85-08

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 82-002	Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants	CI	TVA: memo dated February 6, 1985 NRC: IR 390/391 85-08 ---------- Approach accepted in IR 50-390/85-08 and 50-391/85-08 (March 29, 1985). Unit 2 Action: Implement same approach as Unit 1.
B 82-003	Stress Corrosion Cracking in Thick-Wall, Large Diameter, Stainless Steel, Recirculation System Piping at BWR Plants	NA	Boiling Water Reactor
B 82-004	Deficiencies in Primary Containment Electrical Penetration Assemblies	C	TVA: letter dated January 24, 1983 NRC: IR 390/83-10 and 391/83-08
B 83-001	Failure of Trip Breakers (Westinghouse DB-50) to Open on Automatic Trip Signal	C	NRC: IRs 390/391 85-08 and 390/391 92-13
B 83-002	Stress Corrosion Cracking in Large-Diameter Stainless Steel Recirculation System Piping at BWR Plants	NA	Boiling Water Reactor
B 83-003	Check Valve Failures in Raw Water Cooling Systems of Diesel Generators	NA	Addressed by Inservice Testing for Construction Permit holders
B 83-004	Failure of the Undervoltage Trip Function of Reactor Trip Breakers	CI	NRC: IR 390/391 85-08 ---------- Unit 2 Action: Install new undervoltage attachment with wider grooves on the reactor trip breakers.
B 83-005	ASME Nuclear Code Pumps and Spare Parts Manufactured by the Hayward Tyler Pump Company	C	TVA: letter dated September 7, 1983 NRC: IR 390/85-03 and 391/85-04; NUREG/CR 5297
B 83-006	Nonconforming Material Supplied by Tube-Line Facilities	CI	TVA: letter dated February 2, 1984 NRC: IR 390/391 84-03; NUREG/CR 4934 ---------- NRC SER for both units dated September 23, 1991, provided an alternate acceptance for fittings supplied by Tube-Line. Unit 2 Action: Implement as necessary.
B 83-007	Apparently Fraudulent Products Sold by Ray Miller, Inc.	C	TVA: letter dated March 22, 1984 NRC: IR 390/85-03 and 391/85-04
B 83-008	Electrical Circuit Breakers With an Undervoltage Trip Feature in Safety-Related Applications Other Than the Reactor Trip System	C	TVA: letter dated March 29, 1984 NRC: IR 390/84-35 and 391/84-33
B 84-001	Cracks in BWR Mark 1 Containment Vent Headers	NA	Boiling Water Reactor

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ITEM	TITLE	*	ADDITIONAL INFORMATION
B 84-002	Failure of GE Type HFA Relays In Use In Class 1E Safety Systems	C	TVA: letter dated July 10, 1984 NRC: IR 390/391 84-42 and IR 390/84-77 and 391/84-54
B 84-003	Refueling Cavity Water Seal	CI	Reviewed in IR 390/93-11. Unit 2 Action: Ensure appropriate abnormal operating instructions (AOIs) are used for Unit 2.
B 85-001	Steam Binding of Auxiliary Feedwater Pumps	CI	TVA: letter dated January 27, 1986 NRC: IR 390/391 90-20 ---------- NRC accepted approach in letter dated July 20, 1988, and reviewed response in Appendix EE of SSER16. Unit 2 Action: Procedures and hardware will be in place to ensure recognition of indications of steam binding and maintenance of system operability until check valves are repaired and back leakage stopped.
B 85-002	Undervoltage Trip Attachment of Westinghouse DB-50 Type Reactor Trip Breakers	CI	Unit 2 Action: Install automatic shunt trip on the Westinghouse DS-416 reactor trip breakers on Unit 2.
B 85-003	Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings	C	Superseded by GL 89-10
B 86-001	Minimum Flow Logic Problems That Could Disable RHR Pumps	NA	Boiling Water Reactor
B 86-002	Static "O" Ring Differential Pressure Switches	C	TVA: letter dated November 20, 1986 NRC: IR 390/391/90-24
B 86-003	Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air-Operated Valve in Minimum Flow Recirculation Line	C	TVA: letter dated November 14, 1986 NRC: IR 390/391/87-03
B 86-004	Defective Teletherapy Timer That May Not Terminate Treatment Dose	NA	Does not apply to power reactor.
B 87-001	Thinning of Pipe Walls in Nuclear Power Plants	C	TVA: letter dated September 18, 1987 NRC: NUREG/CR 5287 ---------- Closed to GL 89-08
B 87-002	Fastener Testing to Determine Conformance with Applicable Material Specifications	CI	TVA: letters dated April 15, 1988, July 6, 1988, September 12, 1988, and January 27, 1989 NRC: letter dated August 18, 1989 ---------- NRC closed in letter dated August 18, 1989. Unit 2 Action: Complete for Unit 2, using information used for Unit 1, as applicable.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 88-001	Defects in Westinghouse Circuit Breakers	C	TVA: letter dated November 15, 1991 NRC: IR 390/391 93-01
B 88-002	Rapidly Propagating Fatigue Cracks in Steam Generator Tubes	CI	NRC acceptance letter dated June 7, 1990, for both units. Unit 2 Actions: Evaluate E/C data to determine anti-vibration bar penetration depth; perform T/H analysis to identify susceptible tubes; modify, if necessary.
B 88-003	Inadequate Latch Engagement in HFA Type Latching Relays Manufactured by General Electric (GE) Company	C	TVA: letter dated April 13, 1992 NRC: IR 390/391 92-13
B 88-004	Potential Safety-Related Pump Loss	CI	NRC acceptance letter dated May 24, 1990, for both units. Unit 2 Action: Perform calculations and install check valves to prevent pump to pump interaction.
B 88-005	Nonconforming Materials Supplied by Piping Supplies, Inc. and West Jersey Manufacturing Company	CI	NRC reviewed in Appendix EE of SSER16. Unit 2 Action: Complete review to locate installed WJM material and perform in-situ hardness testing for Unit 2.
B 88-006	Actions to be Taken for the Transfer of Model No. SPEC 2-T Radiographic Exposure Device	NA	Does not apply to power reactor.
B 88-007	Power Oscillations in BWRs	NA	Boiling Water Reactor
B 88-008	Thermal Stresses in Piping Connected to Reactor Cooling Systems	CI	NRC acceptance letter dated September 19, 1991, for both units. Unit 2 Action: Implement program to prevent thermal stratification.
B 88-009	Thimble Tube Thinning in Westinghouse Reactors	CI	Reviewed in Appendix EE of SSER16. Unit 2 Action: TVA letter dated March 11, 1994, for both units committed to establish a program and inspect the thimble tubes during the first refueling outage.
B 88-010	Nonconforming Molded-Case Circuit Breakers	CI	Unit 2 Action: Replace those circuits not traceable to a circuit breaker manufacturer.
B 88-011	Pressurizer Surge Line Thermal Stratification	CI	NRC SER on "Leak-Before-Break" (April 28, 1993) and reviewed in Appendix EE of SSER16. Unit 2 Action: Complete modifications to accommodate Surge Line thermal movements and incorporate a temperature limitation during heatup and cooldown operations into Unit 2 procedures.
B 89-001	Failure of Westinghouse Steam Generator Tube Mechanical Plugs	CI	NRC acceptance letter dated September 26, 1991 for both units. Unit 2 Action: Remove SG tube plugs.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 89-002	Stress Corrosion Cracking of High-Hardness Type 410 Stainless Steel Internal Preloaded Bolting in Anchor Darling Model S350W Swing Check Valves or Valves of Similar Nature	CI	NRC reviewed in Appendix EE of SSER16. Unit 2 Actions: Replace the flapper assembly hold-down bolts fabricated on the 14 (12 valves are installed) Atwood and Morrell Mark No. 47W450-53 check valves. Replacement bolts are to be fabricated from ASTM F593 Alloy 630. A review of the remaining Unit 2 safety related swing check valves will be performed.
B 89-003	Potential Loss of Required Shutdown Margin During Refueling Operations	CI	TVA: letter dated June 19, 1990 NRC: IR 390/391 94-04 and letter dated June 22, 1990 ---------- NRC acceptance letter dated June 22, 1990. Unit 2 Action: Ensure that requirements for fuel assembly configuration, fuel loading and training are included in Unit 2.
B 90-001	Loss of Fill-Oil in Transmitters Manufactured by Rosemount	CI	Unit 2 Action: Implement applicable recommendations from this Bulletin including identification of potentially defective transmitters and an enhanced surveillance program which monitors transmitters for loss of fill oil.
B 90-002	Loss of Thermal Margin Caused by Channel Box Bow	NA	Boiling Water Reactor
B 91-001	Reporting Loss of Criticality Safety Controls	NA	Does not apply to power reactor.
B 92-001	Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage	OV	TVA configurations for Thermo-Lag 330-1 were reviewed in SSER18 and accepted in NRC letter dated January 6, 1998 (includes a supplemental SE). Unit 2 Actions: 1) Review Watts Bar design and installation requirements for Thermolag 330-1 fire barrier system and evaluate the Thermolag currently installed in Unit 2. 2) Remove and replace, as required, or prepare an approved deviation.
B 92-002	Safety Concerns Related to "End of Life" of Aging Theratronics Teletherapy Units	NA	Does not apply to power reactor.
B 92-003	Release of Patients After Brachytherapy	NA	Does not apply to power reactor.
B 93-001	Release of Patients After Brachytherapy Treatment with Remote Afterloading Devices	NA	Does not apply to power reactor.
B 93-002	Debris Plugging of Emergency Core Cooling Suction Strainers	NA	Boiling Water Reactor
B 93-003	Resolution of Issues Related to Reactor Vessel Water Level Instrumentation in BWRs	NA	Boiling Water Reactor
B 94-001	Potential Fuel Pool Draindown Caused by Inadequate Maintenance Practices at Dresden Unit 1	NA	Addressed to holders of licenses for nuclear power reactors that are permanently shut down with spent fuel in the spent fuel pool
B 94-002	Corrosion Problems in Certain Stainless Steel Packagings Used to Transport Uranium Hexafluoride	NA	Does not apply to power reactor.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 95-001	Quality Assurance Program for Transportation of Radioactive Material	NA	Does not apply to power reactor.
B 95-002	Unexpected Clogging of a Residual Heat Removal Pump Strainer While Operating in Suppression Pool Cooling Mode	NA	Boiling Water Reactor
B 96-001, first part	Control Rod Insertion Problems (PWR)	OV	NRC acceptance letter for Unit 1 dated July 22, 1996 – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Issue Emergency Operating Procedure.
B 96-001, last part	Control Rod Insertion Problems (PWR)	OV	NRC acceptance letter for Unit 1 dated July 22, 1996 – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: and provide core map. [Input sheet to JEM < 03/27]
B 96-002	Movement of Heavy Loads over Spent Fuel, Over Fuel in the Reactor, or Over Safety-Related Equipment	CI	NRC closure letter dated May 20, 1998. Unit 2 Action: Unit 2 Heavy Loads Program will be in compliance with NUREG-0612.
B 96-003	Potential Plugging of ECCS Suction Strainers by Debris in BWRs	NA	Boiling Water Reactor
B 96-004	Chemical, Galvanic, or Other Reactions in Spent Fuel Storage and Transportation Casks	NA	Info
B 97-001	Potential for Erroneous Calibration, Dose Rate, or Radiation Exposure Measurements with Certain Victoreen Model 530 and 531SI Electrometer/Dosemeters	NA	Does not apply to power reactor.
B 97-002	Puncture Testing of Shipping Packages Under 10 CFR Part 71	NA	Does not apply to power reactor.
B 01-001	Circumferential Cracking of Reactor Pressure Vessel (RPV) Head Penetration Nozzles	OV	NRC acceptance letter dated November 20, 2001 (Unit 1) – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Perform baseline inspection.
B 02-001	RPV Head Degradation and Reactor Coolant Pressure Boundary Integrity	OV	NRC review of Unit 1's 15 day response in letter dated May 20, 2002 – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Perform baseline inspection.
B 02-002	RPV Head and Vessel Head Penetration Nozzle Inspection Programs	OV	NRC acceptance letter dated December 20, 2002 (Unit 1) – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Perform baseline inspection.
B 03-001	Potential Impact of Debris Blockage on Emergency Sump Recirculation at PWRs	NA	TVA: letter dated September 7, 2007
B 03-002	Leakage from RPV Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity (PWRs)	OV	NRC acceptance letter dated October 6, 2004 (Unit 1) – Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Perform baseline inspection.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
B 03-003	Potentially Deficient 1-inch Valves for Uranium Hexaflouride Cylinders	NA	Does not apply to power reactor.
B 03-004	Rebaselining of Data in the Nuclear Management and Safeguards System	C	TVA: letter dated December 18, 2003 ---------- Item concerns a multi-unit issue that was completed for both units.
B 04-001	Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at PWRs	OV	Initial response for Unit 2 on September 7, 2007. Unit 2 Actions: Provide details of pressurizer and penetrations and apply Material Stress Improvement Process.
B 05-001	Material Control and Accounting at Reactors and Wet Spent Fuel Storage Facilities	C	TVA: letters dated March 21, 2005 and May 11, 2005 ---------- Item concerns a multi-unit issue that was completed for both units.
B 05-002	Emergency Preparedness and Response Actions for Security-Based Events	C	TVA: letters dated January 20, 2006 and August 16, 2006. ---------- Item concerns a multi-unit issue that was completed for both units.
B 07-001	Security Officer Attentiveness	OV	Item concerns a multi-unit issue that was completed for both units.
C 76-001	Crane Hoist Control Circuit Modifications	C	See B 76-007 for additional information.
C 76-002	Relay Failures - Westinghouse BF (AC) and BFD (DC) Relays	C	TVA: letter dated November 22, 1976 informed NRC that these relay types are not used in Class 1E circuits. NRC: IR 50/390/76-11 and 50/391/76-11
C 76-003	Radiation Exposures in Reactor Cavities	NA	Info
C 76-004	Neutron Monitor and Flow Bypass Switch Malfunctions	NA	Boiling Water Reactor
C 76-005	Hydraulic Shock And Sway Suppressors - Maintenance of Bleed and Lock-Up Velocities on ITT Grinnell's Model Nos. - Fig. 200 And Fig. 201, Catalog Ph-74-R	C	TVA: letter dated January 7, 1977 informed NRC that no Grinnell shock suppressors or sway braces have been or will be installed at WBN.
C 76-006	Stress Corrosion Cracks in Stagnant, Low Pressure Stainless Piping Containing Boric Acid Solution at PWRs	NA	Item was applicable only to units with operating license at the time the item was issued.
C 76-007	Inadequate Performance by Reactor Operating and Support Staff Members	NA	Item was applicable only to units with operating license at the time the item was issued.
C 77-001	Malfunctions of Limitorque Valve Operators	NA	Info
C 77-002a	Potential Heavy Spring Flooding (CP)	NA	Item was applicable only to units with operating license at the time the item was issued.
C 77-003	Fire Inside a Motor Control Center	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 77-004	Inadequate Lock Assemblies	NA	Info
C 77-005	Fluid Entrapment in Valve Bonnets	NA	Info
C 77-006	Effects of Hydraulic Fluid on Electrical Cables	NA	Info
C 77-007	Short Period During Reactor Startup	NA	Boiling Water Reactor
C 77-008	Failure of Feedwater Sample Probe	NA	Item was applicable only to units with operating license at the time the item was issued.
C 77-009	Improper Fuse Coordination in BWR Standby Liquid Control System Control Circuits	NA	Boiling Water Reactor
C 77-010	Vacuum Conditions Resulting in Damage to Liquid Process Tanks	NA	Item was applicable only to units with operating license at the time the item was issued.
C 77-011	Leakage of Containment Isolation Valves with Resilient Seats	NA	Info
C 77-012	Dropped Fuel Assemblies at BWR Facilities	NA	Boiling Water Reactor
C 77-013	Reactor Safety Signals Negated During Testing	NA	Info
C 77-014	Separation of Contaminated Water Systems from Noncontaminated Plant Systems	NA	Info
C 77-015	Degradation of Fuel Oil Flow to the Emergency Diesel Generator	NA	Info
C 77-016	Emergency Diesel Generator Electrical Trip Lock-Out Features	NA	Info
C 78-001	Loss of Well Logging Source	NA	Does not apply to power reactor.
C 78-002	Proper Lubricating Oil for Terry Turbines	NA	Info
C 78-003	Packaging Greater Than Type A Quantities of Low Specific Activity Radioactive Material for Transport	NA	Info
C 78-004	Installation Errors That Could Prevent Closing of Fire Doors	NA	Info
C 78-005	Inadvertent Safety Injection During Cooldown	NA	Info
C 78-006	Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities	NA	Info
C 78-007	Damaged Components of a Bergen-Paterson Series 25000 Hydraulic Test Stand	NA	Info
C 78-008	Environmental Qualification of Safety-Related Electrical Equipment at Nuclear Power Plants	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 78-009	Arcing of General Electric Company Size 2 Contactors	NA	Info
C 78-010	Control of Sealed Sources in Radiation Therapy	NA	Does not apply to power reactor.
C 78-011	Recirculation MG Set Overspeed Stops	NA	Boiling Water Reactor
C 78-012	HPCI Turbine Control Valve Lift Rod Bending	NA	Boiling Water Reactor
C 78-013	Inoperability of Service Water Pumps	NA	Info
C 78-014	HPCI Turbine Reversing Chamber Hold Down Bolting	NA	Boiling Water Reactor
C 78-015	Tilting Disc Check Valves Fail to Close with Gravity in Vertical Position	NA	Info
C 78-016	Limitorque Valve Actuators	NA	Info
C 78-017	Inadequate Guard Training/Qualification and Falsified Training Records	NA	Info
C 78-018	UL Fire Test	NA	Info
C 78-019	Manual Override (Bypass) of Safety System Actuation Signals	NA	Info
C 79-001	Administration of Unauthorized Byproduct Material to Humans	NA	Does not apply to power reactor.
C 79-002	Failure of 120 Volt Vital AC Power Supplies	NA	Info
C 79-003	Inadequate Guard Training - Qualification and Falsified Training Records	NA	Info
C 79-004	Loose Locking Nut on Limitorque Valve Operators	NA	Info
C 79-005	Moisture Leakage in Stranded Wire Conductors	NA	Info
C 79-006	Failure to Use Syringe and Bottle Shields in Nuclear Medicine	NA	Does not apply to power reactor.
C 79-007	Unexpected Speed Increase of Reactor Recirculation MG Set Resulted in Reactor Power Increase	NA	Boiling Water Reactor
C 79-008	Attempted Extortion - Low Enriched Uranium	NA	Fuel facilities and operating reactors at the time the item was issued
C 79-009	Occurrences of Split or Punctured Regulator Diaphragms in Certain Self Contained Breathing Apparatus	NA	Info
C 79-010	Pipefittings Manufactured from Unacceptable Material	NA	Info
C 79-011	Design/Construction Interface Problem	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 79-012	Potential Diesel Generator Turbocharger Problem	NA	Info
C 79-013	Replacement of Diesel Fire Pump Starting Contactors	NA	Info
C 79-014	Unauthorized Procurement and Distribution of XE-133	NA	Does not apply to power reactor.
C 79-015	Bursting of High Pressure Hose and Malfunction of Relief Valve O-Ring in Certain Self-Contained Breathing Apparatus	NA	Item was applicable only to units with operating license at the time the item was issued.
C 79-016	Excessive Radiation Exposures to Members of the General Public and a Radiographer	NA	Does not apply to power reactor.
C 79-017	Contact Problem in SB-12 Switches on General Electric Company Metalclad Circuit Breakers	NA	Info
C 79-018	Proper Installation of Target Rock Safety-Relief Valves	NA	Boiling Water Reactor
C 79-019	Loose Locking Devices on Ingersoll-Rand Pumps	NA	Info
C 79-020	Failure of GTE Sylvania Relay Type PM Bulletin 7305 Catalog 5U12-11-AC with a 120V AC Coil	NA	Info
C 79-021	Prevention of Unplanned Releases of Radioactivity	NA	Info
C 79-022	Stroke Times for Power Operated Relief Valves	NA	Info
C 79-023	Motor Starters and Contactors Failed to Operate	C	The Circular did not require a response. TVA reported a nonconformance under 10 CFR 50.55e on January 17, 1980, that four motor starters of this type had been located in the 480V control and auxiliary vent boards at WBN. Gould factory representatives supervised the replacement of the carrier assemblies in accordance with the Gould instructions. The starters with replaced carriers were acceptable. NRC IR 50-390/80-03 and 50-391/80-02 reviewed and closed the associated nonconformance reports.
C 79-024	Proper Installation and Calibration of Core Spray Pipe Break Detection Equipment on BWRs	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 79-025	Shock Arrestor Strut Assembly Interference	C	The Circular did not require a response. TVA reported a nonconformance under 10 CFR 50.55e on March 6, 1980, that a review had determined that nine installed supports had brackets with the potential of hindering full function of the support. Additional supports that were not installed had the same potential problem. TVA initially determined that the supports would be modified in accordance with a vendor approved drawing. TVA subsequently determined that no actual problem existed and no field work was required. NRC IR 50-390/83-15 and 50-391/83-11 reviewed and closed the associated nonconformance reports.
C 80-001	Service Advice for GE Induction Disc Relays	NA	Info
C 80-002	Nuclear Power Plant Staff Work Hours	NA	Info
C 80-003	Protection from Toxic Gas Hazards	NA	Info
C 80-004	Securing of Threaded Locking Devices on Safety-Related Equipment	NA	Info
C 80-005	Emergency Diesel-Generator Lubricating Oil Addition and Onsite Supply	NA	Info
C 80-006	Control and Accountability Systems for Implant Therapy Sources	NA	Does not apply to power reactor.
C 80-007	Problems with HPCI Turbine Oil System	NA	Boiling Water Reactor
C 80-008	BWR Technical Specification Inconsistency - RPS Response Time	NA	Boiling Water Reactor
C 80-009	Problems with Plant Internal Communications Systems	NA	Info
C 80-010	Failure to Maintain Environmental Qualification of Equipment	NA	Info
C 80-011	Emergency Diesel Generator Lube Oil Cooler Failures	NA	Info
C 80-012	Valve-Shaft-to-Actuator Key May Fall Out of Place when Mounted Below Horizontal Axis	NA	Info
C 80-013	Grid Strap Damage in Westinghouse Fuel Assemblies	NA	Info
C 80-014	Radioactive Contamination of Plant Demineralized Water System and Resultant Internal Contamination of Personnel	NA	Info
C 80-015	Loss of Reactor Coolant Pump Cooling and Natural Circulation Cooldown	NA	Info
C 80-016	Operational Deficiencies in Rosemount Model 510DU Trip Units and Model 1152 Pressure Transmitters	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 80-017	Fuel Pin Damage Due to Water Jet from Baffle Plate Corner	NA	Info
C 80-018	10 CFR 50.59 Safety Evaluations for Changes to Radioactive Waste Treatment Systems	NA	Info
C 80-019	Noncompliance with License Requirements for Medical Licensees	NA	Does not apply to power reactor.
C 80-020	Changes in Safe-Slab Tank Dimensions	NA	Info
C 80-021	Regulation of Refueling Crews	NA	Item was applicable only to units with operating license at the time the item was issued.
C 80-022	Confirmation of Employee Qualifications	NA	Info
C 80-023	Potential Defects in Beloit Power Systems Emergency Generators	NA	Info
C 80-024	AECL Teletherapy Unit Malfunction	NA	Does not apply to power reactor.
C 80-025	Case Histories of Radiography Events	NA	Does not apply to power reactor.
C 81-001	Design Problems Involving Indicating Pushbutton Switches Manufactured by Honeywell Incorporated	NA	Info
C 81-002	Performance of NRC-Licensed Individuals while on Duty	NA	Item was applicable only to units with operating license at the time the item was issued.
C 81-003	Inoperable Seismic Monitoring Instrumentation	NA	Info
C 81-004	The Role of Shift Technical Advisors and Importance of Reporting Operational Events	NA	Info
C 81-005	Self-Aligning Rod End Bushings for Pipe Supports	NA	Info
C 81-006	Potential Deficiency Affecting Certain Foxboro 10 to 50 Milliampere Transmitters	NA	Info
C 81-007	Control of Radioactively Contaminated Material	NA	Info
C 81-008	Foundation Materials	NA	Info
C 81-009	Containment Effluent Water that Bypasses Radioactivity Monitor	NA	Info
C 81-010	Steam Voiding in the Reactor Coolant System During Decay Heat Removal Cooldown	NA	Item was applicable only to units with operating license at the time the item was issued.
C 81-011	Inadequate Decay Heat Removal During Reactor Shutdown	NA	Boiling Water Reactor
C 81-012	Inadequate Periodic Test Procedure of PWR Reactor Protection System	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
C 81-013	Torque Switch Electrical Bypass Circuit for Safeguard Service Valve Motors	C	The Circular did not require a response. TVA reported a nonconformance under 10 CFR 50.55e on April 4, 1986 (NCR W367-P), that required closing torque switches were found improperly wired. This issue (Torque switch and overload relay bypass capability for active safety related valves) is part of the Electrical Issues Corrective Action Program for WBN Unit 2.
C 81-014	Main Steam Isolation Valve Failures to Close	NA	Info
C 81-015	Unnecessary Radiation Exposures to the Public and Workers During Events Involving Thickness and Level Measuring Devices	NA	Info
GL 77-001	Intrusion Detection Systems Handbook	NA	Info
GL 77-002	Fire Protection Functional Responsibilities	NA	Info
GL 77-003	Transmittal of NUREG-0321, "A Study of the Nuclear Regulatory Commission Quality Assurance Program"	NA	Info
GL 77-004	Shipments of Contaminated Components From NRC Licensed Power Facilities to Vendors & Service Companies	NA	Info
GL 77-005	Nonconformity of Addressees of Items Directed to the Office of Nuclear Reactor Regulation	NA	Info
GL 77-006	Enclosing Questionnaire Related to Steam Generators	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 77-007	Reliability of Standby Diesel Generator Units	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 77-008	Revised Intrusion Detection Handbook and Entry Control Systems Handbook	NA	Info
GL 78-001	Correction to Letter of 12/15/77 [GL 77-07]	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 78-002	Asymmetric Loads Background and Revised Request for Additional Information	C	NRC: Reviewed in SSER15 – Appendix C (June 1995). Resolved by approval of leak-before-break analysis.
GL 78-003	Request For Information on Cavity Annulus Seal Ring	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 78-004	GAO Blanket Clearance for Letter Dated 12/09/77 [GL 77-06]	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 78-005	Internal Distribution of Correspondence – Asking for Comments on Mass Mailing System	NA	Info
GL 78-006	This GL was never issued.	NA	
GL 78-007	This GL was never issued.	NA	

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 78-008	Enclosing NUREG-0408 Re Mark I Containments, and Granting Exemption from GDC 50 and Enclosing Sample Notice	NA	Boiling Water Reactor
GL 78-009	Multiple-Subsequent Actuations of Safety/Relief Valves Following an Isolation Event	NA	Boiling Water Reactor
GL 78-010	Guidance on Radiological Environmental Monitoring	NA	Info
GL 78-011	Guidance on Spent Fuel Pool Modifications	NA	Info
GL 78-012	Notice of Meeting Regarding "Implementation of 10 CFR 73.55 Requirements and Status of Research ..."	NA	Info
GL 78-013	Forwarding of NUREG-0219	NA	Info
GL 78-014	Transmittal of Draft NUREG-0219 for Comment	NA	Info
GL 78-015	Request for Information on Control of Heavy Loads Near Spent Fuel	NA	See GL 81-007.
GL 78-016	Request for Information on Control of Heavy Loads Near Spent Fuel Pools	NA	Info
GL 78-017	Corrected Letter on Heavy Loads Over Spent Fuel	NA	Info
GL 78-018	Corrected Letter on Heavy Loads Over Spent Fuel	NA	Duplicate of GL 81-007
GL 78-019	Enclosing Sandia Report SAND 77-0777, "Barrier Technology Handbook"	NA	Info
GL 78-020	Enclosing – "A Systematic Approach to the Conceptual Design of Physical Protection Systems for Nuclear Facilities	NA	Info
GL 78-021	Transmitting NUREG/CR-0181, "Concerning Barrier and Penetration Data Needed for Physical Security System Assessment"	NA	Info
GL 78-022	Revision to Intrusion Detection Systems and Entry Control Systems Handbooks and Nuclear Safeguards Technology Handbook	NA	Info
GL 78-023	Manpower Requirements for Operating Reactors	NA	Info
GL 78-024	Model Appendix I Technical Specifications and Submittal Schedule For BWRs	NA	Boiling Water Reactor
GL 78-025	This GL was never issued.	NA	
GL 78-026	Excessive Control Rod Guide Tube Wear	NA	Applies only to Babcock and Wilcox designed plants
GL 78-027	Forwarding of NUREG-0181	NA	Info

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 78-028	Forwarding pages omitted from 07/11/78 letter [GL 78-24]	NA	Boiling Water Reactor
GL 78-029	Notice of PWR Steam Generator Conference	NA	Info
GL 78-030	Forwarding of NUREG-0219	NA	Info
GL 78-031	Notice of Steam Generator Conference Agenda	NA	Info
GL 78-032	Reactor Protection System Power Supplies	NA	Boiling Water Reactor
GL 78-033	Meeting Schedule and Locations For Upgraded Guard Qualification	NA	Info
GL 78-034	Reactor Vessel Atypical Weld Material	C	See B 78-12.
GL 78-035	Regional Meetings to Discuss Upgraded Guard Qualifications	NA	Info
GL 78-036	Cessation of Plutonium Shipments by Air Except In NRC Approved Containers	NA	Does not apply to power reactor.
GL 78-037	Revised Meeting Schedule & Locations For Upgraded Guard Qualifications	NA	Info
GL 78-038	Forwarding of 2 Tables of Appendix I, Draft Radiological Effluent Technical Specifications, PWR, and NUREG-0133	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 78-039	Forwarding of 2 Tables of Appendix I, Draft Radiological Effluent Technical Specifications, BWR, and NUREG-0133	NA	Boiling Water Reactor
GL 78-040	Training & Qualification Program Workshops	NA	Info
GL 78-041	Mark II Generic Acceptance Criteria For Lead Plants	NA	Boiling Water Reactor
GL 78-042	Training and Qualification Program Workshops	NA	Info
GL 79-001	Interservice Procedures for Instructional Systems Development - TRADOC	NA	Info
GL 79-002	Transmitting Rev. to Entry Control Systems Handbook (SAND 77-1033), Intrusion Detection Handbook (SAND 76-0554), and Barrier Penetration Database	NA	Info
GL 79-003	Offsite Dose Calculation Manual	NA	Info
GL 79-004	Referencing 4/14/78 Letter - Modifications to NRC Guidance "Review and Acceptance of Spent Fuel Pool Storage and Handling"	NA	Info
GL 79-005	Information Relating to Categorization of Recent Regulatory Guides by the Regulatory Requirements Review Committee	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 79-006	Contents of the Offsite Dose Calculation Manual	NA	Info
GL 79-007	Seismic (SSE) and LOCA Responses (NUREG-0484)	NA	Info
GL 79-008	Amendment to 10 CFR 73.55	NA	Info
GL 79-009	Staff Evaluation of Interim Multiple-Consecutive Safety-Relief Valve Actuations	NA	Boiling Water Reactor
GL 79-010	Transmitting Regulatory Guide 2.6 for Comment	NA	Does not apply to power reactor.
GL 79-011	Transmitting "Summary of Operating Experience with Recalculating Steam Generators, January 1979," NUREG-0523	NA	Info
GL 79-012	ATWS - Enclosing Letter to GE, with NUREG-0460, Vol. 3	NA	Info
GL 79-013	Schedule for Implementation and Resolution of Mark I Containment Long Term Program	NA	Info
GL 79-014	Pipe Crack Study Group - Enclosing NUREG-0531 and Notice	NA	Info
GL 79-015	Steam Generators - Enclosing Summary of Operating Experience with Recirculating Steam Generators, NUREG-0523	NA	Info
GL 79-016	Meeting Re Implementation of Physical Security Requirements	NA	Info
GL 79-017	Reliability of Onsite Diesel Generators at Light Water Reactors	NA	Info
GL 79-018	Westinghouse Two-Loop NSSS	NA	Addressed to specific plant(s).
GL 79-019	NRC Staff Review of Responses to Bs 79-06 and 79-06a	NA	Addressed to specific plant(s).
GL 79-020	Cracking in Feedwater Lines	C	See B 79-13.
GL 79-021	Enclosing NUREG/CR-0660, Enhancement of on Site Emergency Diesel Generator Reliability"	NA	Info
GL 79-022	Enclosing NUREG-0560, "Staff Report on the Generic Assessment of Feedwater Transients in PWRs Designed by B&W"	NA	Applies only to Babcock and Wilcox designed plants
GL 79-023	NRC Staff Review of Responses to B 79-08	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 79-024	Multiple Equipment Failures in Safety-Related Systems	NA	GL 79-24 provided a discussion of an inadvertent reactor scram and safety injection during monthly surveillance tests of the safeguards system at a PWR facility. The GL requested a review to determine if similar errors had or could have occurred at other PWRs. The GL further requested a review of management policies and procedures to assure that multiple equipment failures in safety-related systems will be vigorously pursued and analyzed to identify significant reduction in the ability of safety systems to function as required. A response was requested within 30 days of receipt of the GL with the results of these reviews. TVA does not have a record of receiving or responding to this GL. Thus, TVA concluded that this item was applicable only to PWRs with an operating license at the time the GL was issued.
GL 79-025	Information Required to Review Corporate Capabilities	NA	Info
GL 79-026	Upgraded Standard Technical Specification Bases Program	NA	Info
GL 79-027	Operability Testing of Relief and Safety Relief Valves	NA	Boiling Water Reactor
GL 79-028	Evaluation of Semi-Scale Small Break Experiment	NA	Info
GL 79-029	Transmitting NUREG-0473, Revision 2, Draft Radiological Effluent Technical Specifications	NA	Info
GL 79-030	Transmitting NUREG-0472, Revision 2, Draft Radiological Technical Specifications	NA	Info
GL 79-031	Submittal of Copies of Response to 6/29/79 NRC Request [79-25]	NA	Info
GL 79-032	Transmitting NUREG-0578, "TMI-2 Lessons Learned"	NA	Info
GL 79-033	Transmitting NUREG-0576, "Security Training and Qualification Plans"	NA	Info
GL 79-034	New Physical Security Plans (FR 43280-285)	NA	Does not apply to power reactor.
GL 79-035	Regional Meetings to Discuss Impacts on Emergency Planning	NA	Info
GL 79-036	Adequacy of Station Electric Distribution Systems Voltages	CI	This GL tracked compliance with BTP PSB-1, "Adequacy of Station Electric Distribution System Voltages." Unit 2 Action: Perform verification during the preoperational testing.
GL 79-037	Amendment to 10 CFR 73.55 Deferral from 8/1/79 to 11/1/79	NA	Info
GL 79-038	BWR Off-Gas Systems - Enclosing NUREG/CR-0727	NA	Boiling Water Reactor
GL 79-039	Transmitting Division 5 Draft Regulatory Guide and Value Impact Statement	NA	Does not apply to power reactor.

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ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 79-040	Follow-up Actions Resulting from the NRC Staff Reviews Regarding the TMI-2 Accident	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-041	Compliance with 40 CFR 190, EPA Uranium Fuel Cycle Standard	NA	Info
GL 79-042	Potentially Unreviewed Safety Question on Interaction Between Non-Safety Grade Systems and Safety Grade Systems	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-043	Reactor Cavity Seal Ring Generic Issue	NA	Addressed to specific plant(s).
GL 79-044	Referencing 6/29/79 Letter Re Multiple Equipment Failures	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-045	Transmittal of Reports Regarding Foreign Reactor Operating Experiences	NA	Info
GL 79-046	Containment Purge and Venting During Normal Operation – Guidelines for Valve Operability	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-047	Radiation Training	NA	Info
GL 79-048	Confirmatory Requirements Relating to Condensation Oscillation Loads for the Mark I Containment Long Term Program	NA	Boiling Water Reactor
GL 79-049	Summary of Meetings Held on 9/18-20/79 to Discuss Potential Unreviewed Safety Question on Systems Interaction for B&W PI	NA	Info
GL 79-050	Emergency Plans Submittal Dates	NA	Info
GL 79-051	Follow-up Actions Resulting from the NRC Staff Reviews Regarding the TMI-2 Accident	NA	GL 79-51 provided follow-up actions resulting from the Three Mile Island Unit 2 accident. GL 79-51 was provided for planning and guidance purposes. Its principal element was a report titled "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" (NUREG-0573). This GL and the NUREG were superseded by GL 80-90 and NUREG-0737. See GL 80-90 for further information.
GL 79-052	Radioactive Release at North Anna Unit 1 and Lessons Learned	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-053	ATWS	NA	Info
GL 79-054	Containment Purging and Venting During Normal Operation	NA	Addressed to specific plant(s).
GL 79-055	Summary of Meeting Held on October 12, 1979 to Discuss Responses to Bulletins 79-05C and 79-06C and HPI Termination Criteria	NA	Info
GL 79-056	Discussion of Lessons Learned Short Term Requirements	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-057	Acceptance Criteria for Mark I Long Term Program	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 79-058	ECCS Calculations on Fuel Cladding	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 79-059	This GL was never issued.	NA	
GL 79-060	Discussion of Lessons Learned Short Term Requirements	NA	Info
GL 79-061	Discussion of Lessons Learned Short Term Requirements	NA	Info
GL 79-062	ECCS Calculations on Fuel Cladding	NA	Item was applicable only to units with operating license at the time the item was issued. Duplicate of GL 79-058
GL 79-063	Upgraded Emergency Plans	C	GL 79-63 advised applicants for licenses of proposed rulemaking that NRC concurrence in State and local emergency plans would be a condition for issuing an operating license. TVA responded to GL 79-63 on January 3, 1980, and confirmed the intent to revise the Emergency Plan to address the NRC requirements.
GL 79-064	Suspension of All Operating Licenses (PWRs)	NA	Info
GL 79-065	Radiological Environmental Monitoring Program Requirements - Enclosing Branch Technical Position, Revision 1	NA	Info
GL 79-066	Additional Information Re 11/09/79 Letter on ECCS Calculations [GL 79-62]	NA	Info
GL 79-067	Estimates for Evacuation of Various Areas Around Nuclear Power Reactors	NA	Info
GL 79-068	Audit of Small Break LOCA Guidelines	NA	Info
GL 79-069	Cladding Rupture, Swelling, and Coolant Blockage as a Result of a Reactor Accident	NA	Info
GL 79-070	Environmental Monitoring for Direct Radiation	NA	Info
GL 80-001	NUREG-0630, "Cladding, Swelling and Rupture - Models For LOCA Analysis"	NA	Info
GL 80-002	QA Requirements Regarding Diesel Generator Fuel Oil	C	TVA: FSAR 9.5.4.2
GL 80-003	BWR Control Rod Failures	NA	Boiling Water Reactor
GL 80-004	B 80-01, "Operability of ADS Valve Pneumatic Supply"	NA	Boiling Water Reactor
GL 80-005	B 79-01b, "Environmental Qualification of Class 1E Equipment"	NA	Info
GL 80-006	Issuance of NUREG-0313, Rev 1, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping"	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-007	This GL was never issued.	NA	
GL 80-008	B 80-02. "Inadequate Quality Assurance for Nuclear Supplied Equipment"	NA	Boiling Water Reactor
GL 80-009	Low Level Radioactive Waste Disposal	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-010	Issuance of NUREG-0588, "Interim Staff Position On Equipment Qualifications of Safety-Related Electrical Equipment"	NA	Info
GL 80-011	B 80-03, "Loss of Charcoal From Standard Type II, 2 Inch, Tray Absorber Cells"	C	GL 80-11 transmitted Bulletin 80-03. TVA responded to B 80-03 on March 21, 1980. See B 80-03 for further information.
GL 80-012	B 80-04, "Analysis of a PWR Main Steam Line Break With Continued Feedwater Addition"	NA	Info
GL 80-013	Qualification of Safety Related Electrical Equipment	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-014	LWR Primary Coolant System Pressure Isolation Valves	CT	TVA: FSAR 5.2.7.4 NRC: 1.14.2 of SSER 6 ---------- NRC reviewed in 1.14.2 of SSER6. Unit 2 Action: Incorporate guidance into Technical Specifications.
GL 80-015	Request for Additional Management and Technical Resources Information	NA	Info
GL 80-016	B 79-01b, "Environmental Qualification of Class 1E Equipment"	NA	Info
GL 80-017	Modifications to BWR Control Rod Drive Systems	NA	Boiling Water Reactor
GL 80-018	Crystal River 3 Reactor Trip From Approximately 100% Full Power	NA	Applies only to Babcock and Wilcox designed plants
GL 80-019	Resolution of Enhanced Fission Gas Release Concern	NA	Info
GL 80-020	Actions Required From OL Applicants of NSSS Designs by W and CE Resulting From NRC B&O Task Force Review of TMI2 Accident	NA	Info
GL 80-021	B 80-05, "Vacuum Condition Resulting in Damage to Chemical Volume Control System Holdup Tanks"	CI	Closed in IR 50-390/84-59 and 50-391/84-45. Unit 2 Action: Complete surveillance procedures for Unit 2.
GL 80-022	Transmittal of NUREG-0654, "Criteria For Preparation and Evaluation of Radiological Emergency Response Plan"	NA	Info
GL 80-023	Change of Submittal Date For Evaluation Time Estimates	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-024	Transmittal of Information on NRC "Nuclear Data Link Specifications"	NA	Info
GL 80-025	B 80-06, "Engineering Safety Feature (ESF) Reset Controls"	NA	Info
GL 80-026	Qualifications of Reactor Operators	NA	Info
GL 80-027	B 80-07, "BWR Jet Pump Assembly Failure"	NA	Boiling Water Reactor
GL 80-028	B 80-08, "Examination of Containment Liner Penetration Welds"	C	GL 80-28 transmitted Bulletin 80-08. TVA responded to B 80-08 on July 8, 1980. See B 80-08 for further information.
GL 80-029	Modifications to Boiling Water Reactor Control Rod Drive Systems	NA	Boiling Water Reactor
GL 80-030	Clarification of The Term "Operable" As It Applies to Single Failure Criterion For Safety Systems Required by TS	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-031	B 80-09, "Hydramotor Actuator Deficiencies"	NA	Info
GL 80-032	Information Request on Category I Masonry Walls Employed by Plants Under CP and OL Review	C	GL 80-32 transmitted NRC questions on masonry walls. TVA provided the information requested by letters dated February 12, 1981, for reinforced walls and August 20, 1981, for nonreinforced walls. TVA provided a final response on January 22, 1982. See B 80-11 for further information.
GL 80-033	Actions Required From OL Applicants of B&W Designed NSSS Resulting From NRC B&O Task Force Review of TMI2 Accident	NA	Applies only to Babcock and Wilcox designed plants
GL 80-034	Clarification of NRC Requirements for Emergency Response Facilities at Each Site	NA	Info
GL 80-035	Effect of a DC Power Supply Failure on ECCS Performances	NA	Boiling Water Reactor
GL 80-036	B 80-10, "Contamination of Non-Radioactive System and Resulting Potential For Unmonitored, Uncontrolled Release to Environment"	NA	Info
GL 80-037	Five Additional TMI-2 Related Requirements to Operating Reactors	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-038	Summary of Certain Non-Power Reactor Physical Protection Requirements	NA	Does not apply to power reactor.
GL 80-039	B 80-11, "Masonry Wall Design"	NA	Info
GL 80-040	Transmittal of NUREG-0654, "Report of the B&O Task Force" and Appropriate NUREG-0626, "Generic Evaluation of FW Transient and Small Break LOCA"	NA	Info
GL 80-041	Summary of Meetings Held on April 22 &23, 1980 With Representatives of the Mark I Owners Group	NA	Info
GL 80-042	B 80-12, "Decay Heat Removal System Operability"	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-043	B 80-13, "Cracking In Core Spray Spargers"	NA	Boiling Water Reactor
GL 80-044	Reorganization of Functions and Assignments Within ONRR/SSPB	NA	Info
GL 80-045	Fire Protection Rule	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-046 and GL 80-047	Generic Technical Activity A-12, "Fracture Toughness and Additional Guidance on Potential for Low Fracture toughness and Laminar Tearing on PWR Steam Generator Coolant Pump Supports"	C	No response was required for this GL, and NUREG-0577 states that the lamellar tearing aspect of this issue was resolved by the NUREG. Further, the NUREG states that for plants under review, the fracture toughness issue was resolved.
GL 80-048	Revision to 5/19/80 Letter On Fire Protection [GL 80-45]	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-049	Nuclear Safeguards Problems	NA	Info
GL 80-050	Generic Activity A-10, "BWR Cracks"	NA	Boiling Water Reactor
GL 80-051	On-Site Storage of Low-Level Waste	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-052	Five Additional TMI-2 Related Requirements - Erata Sheets to 5/7/80 Letter [GL 80-37]	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-053	Decay Heat Removal Capability	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-054	B 80-14, "Degradation of Scram Discharge Volume Capability"	NA	Boiling Water Reactor
GL 80-055	B 80-15, "Possible Loss of Hotline With Loss of off-Site Power"	NA	Info
GL 80-056	Commission Memorandum and Order on Equipment Qualification	NA	Info
GL 80-057	Further Commission Guidance For Power Reactor Operating Licenses NUREG-0660 and NUREG-0694	NA	Info
GL 80-058	B 80-16, "Potential Misapplication of Rosemount Inc. Models 1151/1152 Pressure Transmitters With "A" Or "D" Output Codes"	NA	Info
GL 80-059	Transmittal of Federal Register Notice RE Regional Meetings to Discuss Environmental Qualification of Electrical Equipment	NA	Info
GL 80-060	Request for Information Regarding Evacuation Times	NA	Info
GL 80-061	TMI-2 Lessons Learned	NA	Info
GL 80-062	TMI-2 Lessons Learned	NA	Boiling Water Reactor
GL 80-063	B 80-17, "Failure of Control Rods to Insert During a Scram at a BWR"	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-064	Scram Discharge Volume Designs	NA	Boiling Water Reactor
GL 80-065	Request for Estimated Construction Completion and Fuel Load Schedules	NA	Info
GL 80-066	B 80-17, Supplement 1, "Failure of Control Rods to Insert During a Scram at a BWR"	NA	Boiling Water Reactor
GL 80-067	Scram Discharge Volume	NA	Boiling Water Reactor
GL 80-068	B 80-17, Supplement 2, "Failures Revealed by Testing Subsequent to Failure of Control Rods to Insert During a Scram at a BWR"	NA	Boiling Water Reactor
GL 80-069	B 80-18, "Maintenance of Adequate Minimum Flow Through Centrifugal Charging Pumps Following Secondary Side HELB"	NA	Info
GL 80-070	B 80-19, "Failures of Mercury-Wetted Matrix Relays in RPS of Operating Nuclear Power Plants Designed by GE"	NA	Info
GL 80-071	B 80-20, "Failures of Westinghouse Type W-2 Spring Return to Neutral Control Switches"	NA	Info
GL 80-072	Interim Criteria For Shift Staffing	NA	Info
GL 80-073	"Functional Criteria For Emergency Response Facilities," NUREG-0696	NA	Info
GL 80-074	Notice of Forthcoming Meeting With Representatives of EPRI to Discuss Program For Resolution of USI A-12, "Fracture Toughness Issue"	NA	Info
GL 80-075	Lessons Learned Tech. Specs.	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-076	Notice of Forthcoming Meeting With GE to Discussed Proposed BWR Feedwater Nozzle Leakage Detection System	NA	Info
GL 80-077	Refueling Water Level – Technical Specifications Changes	CT	Unit 2 Action: Address in Technical Specifications, as appropriate.
GL 80-078	Mark I Containment Long-Term Program	NA	Boiling Water Reactor
GL 80-079	B 80-17, Supplement 3, "Failures Revealed by Testing Subsequent to Failure of Control Rods to Insert During a Scram At a BWR"	NA	Boiling Water Reactor
GL 80-080	Preliminary Clarification of TMI Action Plan Requirements	NA	Info
GL 80-081	Preliminary Clarification of TMI Action Plan Requirements - Addendum to 9/5/80 Letter [GL 80-80]	NA	Info
GL 80-082	B 79-01b, Supplement 2, "Environmental Qualification of Class 1E Equipment"	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-083	Environmental Qualification of Safety-Related Equipment	NA	Info
GL 80-084	BWR Scram System	NA	Boiling Water Reactor
GL 80-085	Implementation of Guidance From USI A-12, "Potential For LOW Fracture Toughness and Lamellar Tearing On Component Support"	NA	Info
GL 80-086	Notice of Meeting to Discuss Final Resolution of USI A-12	NA	Info
GL 80-087	Notice of Meeting to Discuss Status of EPRI-Proposed Resolution of the USI A-12 Fracture Toughness Issue	NA	Info
GL 80-088	Seismic Qualification of Auxiliary Feedwater Systems	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-089	B 79-01b, Supplement 3, "Environmental Qualification of Class 1E Equipment"	NA	Info
GL 80-090	NUREG-0737, TMI (Prior and future GLs, with the exception of certain discrete scopes, have been screened into NUREG list for those applicable to Watts Bar 2)	CI	See NUREG items in this list.
GL 80-091	ODYN Code Calculation	NA	Boiling Water Reactor
GL 80-092	B 80-21, "Valve Yokes Supplied by Malcolm Foundry Company, Inc."	C	GL 80-92 transmitted Bulletin 80-21. TVA responded to B 80-21 on May 6, 1981. See B 80-21 for further information.
GL 80-093	Emergency Preparedness	NA	Does not apply to power reactor.
GL 80-094	Emergency Plan	NA	Info
GL 80-095	Generic Technical Activity A-10, NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking"	NA	Boiling Water Reactor
GL 80-096	Fire Protection	NA	Addressed to specific plant(s).
GL 80-097	B 80-23, "Failures of Solenoid Valves Manufactured by Valcor Engineering Corporation"	NA	Info
GL 80-098	B 80-24, "Prevention of Damage Due to Water Leakage Inside Containment"	NA	Info
GL 80-099	Technical Specifications Revisions For Snubber Surveillance	NA	Info
GL 80-100	Appendix R to 10 CFR 50 Regarding Fire Protection - Federal Register Notice	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-101	Inservice Inspection Programs	NA	Addressed to specific plant(s).
GL 80-102	Commission Memorandum and Order of May 23, 1980 (Referencing B 79-01b, Supplement 2 - q.2 & 3 - Sept 30, 1980)	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 80-103	Fire Protection - Revised Federal Register Notice	NA	Info
GL 80-104	Orders On Environmental Qualification of Safety Related Electrical Equipment	NA	Info
GL 80-105	Implementation of Guidance For USI A-12, "Potential For Low Fracture toughness and Lamellar Tearing On Component Supports"	NA	Info
GL 80-106	Report On ECCS Cladding Models, NUREG-0630	NA	Info
GL 80-107	BWR Scram Discharge System	NA	Boiling Water Reactor
GL 80-108	Emergency Planning	NA	Info
GL 80-109	Guidelines For SEP Soil Structure Interaction Reviews	NA	Info
GL 80-110	Periodic Updating of FSARS	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 80-111	B 80-17, Supplement 4, "Failure of Control Rods to Insert During a Scram at a BWR"	NA	Boiling Water Reactor
GL 80-112	B 80-25, "Operating Problems With Target Rock Safety Relief Valves"	NA	Info
GL 80-113	Control of Heavy Loads	C	Superseded by GL 81-007.
GL 81-001	Qualification of Inspection, Examination, Testing and Audit Personnel	NA	Info
GL 81-002	Analysis, Conclusions and Recommendations Concerning Operator Licensing	NA	Info
GL 81-003	Implementation of NUREG-0313, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping"	NA	Boiling Water Reactor
GL 81-004	Emergency Procedures and Training for Station Blackout Events	C	Superseded by Station Blackout Rule.
GL 81-005	Information Regarding The Program For Environmental Qualification of Safety-Related Electrical Equipment	NA	Info
GL 81-006	Periodic Updating of Final Safety Analysis Reports (FSARS)	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 81-007	Control of Heavy Loads	CI	"Movement of Heavy Loads Over Spent Fuel, Over Fuel in the Reactor, or Over Safety-Related Equipment" – NRC closure letter dated May 20, 1998. LICENSE CONDITION – Control of heavy loads (NUREG-0612) The staff concluded in SSER13 that the license condition was no longer necessary based on their review of TVA's response to NUREG-0612 guidelines for Phase I in TVA letter dated July 28, 1993. Unit 2 Action: Unit 2 Heavy Loads Program will be in compliance with NUREG-0612.
GL 81-008	ODYN Code	NA	Boiling Water Reactor
GL 81-009	BWR Scram Discharge System	NA	Boiling Water Reactor
GL 81-010	Post-TMI Requirements For The Emergency Operations Facility	NA	Info
GL 81-011	BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking (NUREG-0619)	NA	Boiling Water Reactor
GL 81-012	Fire Protection Rule	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 81-013	SER For GEXL Correlation For 8X8R Fuel Reload Applications For Appendix D Submittals of The GE topical Report	NA	Boiling Water Reactor
GL 81-014	Seismic Qualification of Auxiliary Feedwater Systems	CI	TVA: FSAR 10.4.9 ---------- Unit 2 Action: Additional Unit 2 implementing procedures or other activity is required for completion. [WAS "OL.]
GL 81-015	Environmental Qualification of Class 1E Electrical Equipment - Clarification of Staff's Handling of Proprietary Information	NA	Info
GL 81-016	NUREG-0737, Item I.C.1 SER on Abnormal Transient Operating Guidelines (ATOG)	NA	Applies only to Babcock and Wilcox designed plants
GL 81-017	Functional Criteria for Emergency Response Facilities	NA	Info
GL 81-018	BWR Scram Discharge System - Clarification of Diverse Instrumentation Requirements	NA	Boiling Water Reactor
GL 81-019	Thermal Shock to Reactor Pressure Vessels	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 81-020	Safety Concerns Associated With Pipe Breaks in the BWR Scram System	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 81-021	Natural Circulation Cooldown	CI	TVA responded December 3, 1981. Unit 2 Action: Issue operating procedures.
GL 81-022	Engineering Evaluation of the H. B. Robinson Reactor Coolant System Leak on 1/29/81	NA	Info
GL 81-023	INPO Plant Specific Evaluation Reports	NA	Info
GL 81-024	Multi-Plant Issue B-56, "Control Rods Fail to Fully Insert"	NA	Boiling Water Reactor
GL 81-025	Change in Implementing Schedule For Submission and Evaluation of Upgraded Emergency Plans	NA	Info
GL 81-026	Licensing Requirements for Pending Construction Permit and Manufacturing License Applications	NA	Applicants with pending Construction Permits
GL 81-027	Privacy and Proprietary Material in Emergency Plans	NA	Info
GL 81-028	Steam Generator Overfill	NA	Info
GL 81-029	Simulator Examinations	NA	Info
GL 81-030	Safety Concerns Associated With Pipe Breaks in the BWR Scram System	NA	Boiling Water Reactor
GL 81-031	This GL was never issued.	NA	
GL 81-032	NUREG-0737, Item II.K.3.44, "Evaluation of Anticipated Transients Combined With Single Failure"	NA	Boiling Water Reactor
GL 81-033	This GL was never issued.	NA	
GL 81-034	Safety Concerns Associated With Pipe Breaks in the BWR Scram System	NA	Boiling Water Reactor
GL 81-035	Safety Concerns Associated With Pipe Breaks in the BWR Scram System	NA	Boiling Water Reactor
GL 81-036	Revised Schedule for Completion of TMI Action Plan Item II.D.1, "Relief and Safety Valve Testing"	NA	Info
GL 81-037	ODYN Code Reanalysis Requirements	NA	Boiling Water Reactor
GL 81-038	Storage of Low Level Radioactive Wastes at Power Reactor Sites	NA	Info
GL 81-039	NRC Volume Reduction Policy	NA	Info
GL 81-040	Qualifications of Reactor Operators	NA	Info
GL 82-001	New Applications Survey	NA	Info
GL 82-002	Commission Policy on Overtime	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 82-003	High Burnup MAPLHGR Limits	NA	Boiling Water Reactor
GL 82-004	Use of INPO See-in Program	NA	Info
GL 82-005	Post-TMI Requirements	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-006	This GL was never issued.	NA	
GL 82-007	Transmittal of NUREG-0909 Relative to the Ginna Tube Rupture	NA	Boiling Water Reactor
GL 82-008	Transmittal of NUREG-0909 Relative to the Ginna Tube Rupture	NA	Info
GL 82-009	Environmental Qualification of Safety Related Electrical Equipment	NA	Info
GL 82-010	Post-TMI Requirements	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-011	Transmittal of NUREG-0916 Relative to the Restart of R. E. Ginna Nuclear Power Plant	NA	Info
GL 82-012	Nuclear Power Plant Staff Working Hours	NA	Info
GL 82-013	Reactor Operator and Senior Reactor Operator Examinations	NA	Info
GL 82-014	Submittal of Documents to the NRC	NA	Info
GL 82-015	This GL was never issued.	NA	
GL 82-016	NUREG-0737 Technical Specifications	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-017	Inconsistency of Requirements Between 50.54(T) and 50.15	NA	Info
GL 82-018	Reactor Operator and Senior Reactor Operator Requalification Examinations	NA	Info
GL 82-019	Submittal of Copies of Documentation to NRC - Copy Requirements for Emergency Plans and Physical Security Plans	NA	Info
GL 82-020	Guidance for Implementing the Standard Review Plan Rule	NA	Info
GL 82-021	Fire Protection Audits	NA	Info
GL 82-022	Congressional Request for Information Concerning Steam Generator Tube Integrity	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-023	Inconsistency Between Requirements of 10CFR 73.40(d) and Standard Technical Specifications For Performing Audits of Safeguards Contingency Plans	NA	Info
GL 82-024	Safety Relief Valve Quencher Loads: BWR MARK II and III Containments	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 82-025	Integrated IAEA Exercise for Physical Inventory at LWRS	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-026	NUREG-0744, REV. 1, "Pressure Vessel Material Fracture Toughness"	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-027	Transmittal of NUREG-0763, "Guidelines For Confirmatory In-Plant Tests of Safety-Relief Valve Discharge for BWR Plants"	NA	Boiling Water Reactor
GL 82-028	Inadequate Core Cooling Instrumentation System	O	LICENSE CONDITION - Detectors for Inadequate core cooling (II.F.2) In the original SER, the review of the ICC instrumentation was incomplete. The January 24, 1992, letter superseded the previous responses on this issue. TVA letter for Units 1 and 2 dated January 24, 1992, committed to install Westinghouse ICCM-86 and associated hardware. NRC completed the review for Units 1 and 2 in SSER10. For Unit 2 due to obsolescence of the ICCM-86 system, TVA intends to install the Westinghouse Common Q Post-Accident Monitoring System. Unit 2 Action: Install Westinghouse Common Q PAM system.
GL 82-029	This GL was never issued.	NA	
GL 82-030	Filings Related to 10 CFR 50 Production and Utilization Facilities	NA	Info
GL 82-031	This GL was never issued.	NA	
GL 82-032	Draft Steam Generator Report (SAI)	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 82-033	Supplement to NUREG-0737, "Requirements for Emergency Response Capability"	CI	"Safety Parameter Display System" (SPDS) / "Requirements for Emergency Response Capability" - NRC reviewed in SSER5, SSER6, and 18.2.2 of SSER15. Unit 2 Action: Install SPDS and have it operational prior to start-up after the first refueling outage.
GL 82-034	This GL was never issued.	NA	
GL 82-035	This GL was never issued.	NA	
GL 82-036	This GL was never issued.	NA	
GL 82-037	This GL was never issued.	NA	
GL 82-038	Meeting to Discuss Developments for Operator Licensing Examinations	NA	Info
GL 82-039	Problems With Submittals of Subsequent Information of CURT 73.21 For Licensing Reviews	NA	Info
GL 83-001	Operator Licensing Examination Site Visit	NA	Info
GL 83-002	NUREG-0737 Technical Specifications	NA	Boiling Water Reactor

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 83-003	This GL was never issued.	NA	
GL 83-004	Regional Workshops Regarding Supplement 1 to NUREG-0737, "Requirements For Emergency Response Capability"	NA	Info
GL 83-005	Safety Evaluation of "Emergency Procedure Guidelines, Revision 2," June 1982	NA	Boiling Water Reactor
GL 83-006	Certificates and Revised Format For Reactor Operator and Senior Reactor Operator Licenses	NA	Info
GL 83-007	The Nuclear Waste Policy Act of 1982	NA	Info
GL 83-008	Modification of Vacuum Breakers on Mark I Containments	NA	Boiling Water Reactor
GL 83-009	Review of Combustion Engineering Owners' Group Emergency Procedures Guideline Program	NA	Applies only to Combustion Engineering designed plants
GL 83-010a	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	NA	Applies only to Combustion Engineering designed plants
GL 83-010b	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	NA	Applies only to Combustion Engineering designed plants
GL 83-010c	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	CI	TVA: letters dated January 5, 1984 and June 25, 1984 NRC: letter dated June 8, 1990. ---------- Unit 2 Action: Incorporate emergency response guidelines into applicable procedures. [WAS "NOTE 3."]
GL 83-010d	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 83-010e	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	NA	Applies only to Babcock and Wilcox designed plants
GL 83-010f	Resolution of TMI Action Item II.K.3.5., "Automatic Trip of Reactor Coolant Pumps"	NA	Applies only to Babcock and Wilcox designed plants
GL 83-011	Licensee Qualification for Performing Safety Analyses in Support of Licensing Actions	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 83-012	Issuance of NRC FORM 398 - Personal Qualifications Statement - Licensee	NA	Info
GL 83-013	Clarification of Surveillance Requirements for HEPA Filters and Charcoal Absorber Units In Standard Technical Specifications on ESF Cleanup Systems	NA	Info
GL 83-014	Definition of "Key Maintenance Personnel," (Clarification of Generic Letter 82-12)	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 83-015	Implementation of Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice & Inservice Examinations, Revision 1"	NA	Info
GL 83-016	Transmittal of NUREG-0977 Relative to the ATWS Events at Salem Generating Station, Unit No.1	NA	Info
GL 83-016a	Transmittal of NUREG-0977 Relative to the ATWS Events at Salem Generating Station, Unit No.1	NA	Info
GL 83-017	Integrity of Requalification Examinations for Renewal of Reactor Operator and Senior Reactor Operator Licenses	NA	Info
GL 83-018	NRC Staff Review of the BWR Owners' Group (BWROG) Control Room Survey Program	NA	Boiling Water Reactor
GL 83-019	New Procedures for Providing Public Notice Concerning Issuance of Amendments to Operating Licenses	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 83-020	Integrated Scheduling for Implementation of Plant Modifications	NA	Info
GL 83-021	Clarification of Access Control Procedures for Law Enforcement Visits	NA	Info
GL 83-022	Safety Evaluation of "Emergency Response Guidelines"	NA	Info
GL 83-023	Safety Evaluation of "Emergency Procedure Guidelines"	NA	Applies only to Combustion Engineering designed plants
GL 83-024	TMI Task Action Plan Item I.G.1, "Special Low Power Testing and Training," Recommendations for BWRs	NA	Boiling Water Reactor
GL 83-025	This GL was never issued.	NA	
GL 83-026	Clarification Of Surveillance Requirements For Diesel Fuel Impurity Level Tests	NA	Info
GL 83-027	Surveillance Intervals in Standard Technical Specifications	NA	Info
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 1.2 – Post Trip Review Data and Information Capability	C	TVA: letters dated November 7, 1983 and December 4, 1987 NRC: IR 50-390, 391/86-04

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 2.1 – Equipment Classification and Vendor Interface (Reactor Trip System Components)	CI	TVA: letters dated November 7, 1983 and August 24, 1990 NRC: letters dated October 20, 1986 and June 18, 1990 ---------- Unit 2 Action: Ensure that required information on Critical Structures and Components is properly incorporated into procedures. [WAS "NOTE 3."]
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 2.2 – Equipment Classification and Vendor Interface (All SR Components)"	CI	Unit 2 Action: Enter engineering component background data in INPO's Equipment Performance and Information Exchange System (EPIX) for Unit 2.
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 3.1 – Post-Maintenance Testing (Reactor Trip System Components)	CT	TVA: letters dated November 7, 1983, January 17, 1986 and November 1, 1993 NRC: letters dated December 10, 1985, October 27, 1986, and July 2, 1990; IR 390, 391/86-04 ---------- Unit 2 Action: Test and maintenance procedures and Technical Specifications will include post-maintenance operability testing of safety-related components of the reactor trip system. [WAS "NOTE 3."]
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 3.2 – Post-Maintenance Testing (All SR Components)	CT	TVA: letters dated November 7, 1983, January 17, 1986 and November 1, 1993 NRC: letters dated December 10, 1985, October 27, 1986, and July 2, 1990; IR 390, 391/86-04 ---------- Unit 2 Action: Test and maintenance procedures and Technical Specifications will include post-maintenance operability testing of other (than reactor trip system) safety-related components.
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 4.1 – Reactor Trip System Reliability (Vendor Related Modifications)	CI	TVA: letter dated May 19, 1986 ---------- Unit 2 Action: Confirm vendor-recommended DS416 breaker modifications are implemented.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 4.2 – Reactor Trip System Reliability (Preventive Maintenance and Surveillance Program for Reactor Trip Breakers)	CT	TVA: letters dated November 7, 1983, February 10, 1986, and May 19, 1986 NRC: letters dated July 26, 1985 and June 18, 1992; SSER 16 ---------- Unit 2 Action: Ensure maintenance instruction procedure and Technical Specifications support reliable reactor trip breaker operation. [WAS "NOTE 3."]
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 4.3 – Reactor Trip System Reliability (Automatic Actuation of Shunt Trip Attachment)	C	TVA: letters dated November 7, 1983, March 22, 1985 NRC: IR 50-390/86-04 and 50-391/86-04; letter dated June 18, 1990
GL 83-028	"Required Actions Based on Generic Implications of Salem ATWS Events: 4.5 – Reactor Trip System Reliability (Automatic Actuation of Shunt Trip Attachment)	CT	TVA: letters dated November 7, 1983 and July 26, 1985 NRC: letters dated June 28, 1990 and October 9, 1990; SSERs 5 and 16 ---------- Unit 2 Action: Address in Technical Specifications, as appropriate. [WAS "NOTE 3."]
GL 83-029	This GL was never issued.	NA	
GL 83-030	Deletion of Standard Technical Specifications Surveillance Requirement 4.8.1.1.2.d.6 For Diesel Generator Testing	NA	Info
GL 83-031	Safety Evaluation of "Abnormal Transient Operating Guidelines"	NA	Applies only to Babcock and Wilcox designed plants
GL 83-032	NRC Staff Recommendations Regarding Operator Action for Reactor Trip and ATWS	NA	Info
GL 83-033	NRC Positions on Certain Requirements of Appendix R to 10 CFR 50	NA	Info
GL 83-034	This GL was never issued.	NA	
GL 83-035	Clarification of TMI Action Plan Item II.K.3.31	NA	Info
GL 83-036	NUREG-0737 Technical Specifications	NA	Boiling Water Reactor
GL 83-037	NUREG-0737 Technical Specifications	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 83-038	NUREG-0965, "NRC Inventory of Dams"	NA	Info
GL 83-039	Voluntary Survey of Licensed Operators	NA	Info

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 83-040	Operator Licensing Examination	NA	Info
GL 83-041	Fast Cold Starts of Diesel Generators	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 83-042	Clarification to GL 81-07 Regarding Response to NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants"	NA	Info
GL 83-043	Reporting Requirements of 10 CFR 50, Sections 50.72 and 50.73, and Standard Technical Specifications	NA	Info
GL 83-044	Availability of NUREG-1021, "Operator Licensing Examiner Standards"	NA	Info
GL 84-001	NRC Use Of The Terms "Important To Safety" and "Safety Related"	NA	Info
GL 84-002	Notice of Meeting Regarding Facility Staffing	NA	Info
GL 84-003	Availability of NUREG-0933, "A Prioritization of Generic Safety Issues"	NA	Info
GL 84-004	Safety Evaluation of Westinghouse Topical Reports Dealing with Elimination of Postulated Pipe Breaks in PWR Primary Main Loops	NA	Info
GL 84-005	Change to NUREG-1021, "Operator Licensing Examiner Standards"	NA	Info
GL 84-006	Operator and Senior Operator License Examination Criteria For Passing Grade	NA	Does not apply to power reactor.
GL 84-007	Procedural Guidance for Pipe Replacement at BWRs	NA	Boiling Water Reactor
GL 84-008	Interim Procedures for NRC Management of Plant-Specific Backfitting	NA	Info
GL 84-009	Recombiner Capability Requirements of 10 CFR 50.44(c)(3)(ii)	NA	Boiling Water Reactor
GL 84-010	Administration of Operating Tests Prior to Initial Criticality	NA	Info
GL 84-011	Inspection of BWR Stainless Steel Piping	NA	Boiling Water Reactor
GL 84-012	Compliance With 10 CFR Part 61 and Implementation of Radiological Effluent Technical Specifications (RETs) and Attendant Process Control Program (PCP)	NA	Info
GL 84-013	Technical Specification for Snubbers	NA	Info
GL 84-014	Replacement and Requalification Training Program	NA	Info
GL 84-015	Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability	NA	Info

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 84-016	Adequacy of On-Shift Operating Experience for Near Term Operating License Applicants	NA	Info
GL 84-017	Annual Meeting to Discuss Recent Developments Regarding Operator Training, Qualifications, and Examinations	NA	Info
GL 84-018	Filing of Applications for Licenses and Amendments	NA	Does not apply to power reactor.
GL 84-019	Availability of Supplement 1 to NUREG-0933, "A Prioritization of Generic Safety Issues"	NA	Info
GL 84-020	Scheduling Guidance for Licensee Submittals of Reloads That Involve Unreviewed Safety Questions	NA	Info
GL 84-021	Long Term Low Power Operation in Pressurized Water Reactors	NA	Info
GL 84-022	This GL was never issued.	NA	
GL 84-023	Reactor Vessel Water Level Instrumentation in BWRs	NA	Boiling Water Reactor
GL 84-024	Certification of Compliance to 10 CFR 50.49, Environmental Qualification of Electric Equipment Important To Safety For Nuclear Power Plants	CI	See Special Program for Environmental Qualification.
GL 85-001	Fire Protection Policy Steering Committee Report	NA	Only issued as draft
GL 85-002	Recommended Actions Stemming From NRC Integrated Program for the Resolution of Unresolved Safety Issues Regarding Steam Generator Tube Integrity	CI	TVA responded to the GL on June 17, 1985. Unit 2 Action: Perform SG Inspection.
GL 85-003	Clarification of Equivalent Control Capacity for Standby Liquid Control Systems	NA	Boiling Water Reactor
GL 85-004	Operating Licensing Examinations	NA	Info
GL 85-005	Inadvertent Boron Dilution Events	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 85-006	Quality Assurance Guidance for ATWS Equipment That Is Not Safety-Related	NA	Info
GL 85-007	Implementation of Integrated Schedules for Plant Modifications	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 85-008	10 CFR 20.408 Termination Reports - Format	NA	Info
GL 85-009	Technical Specifications For Generic Letter 83-28, Item 4.3	NA	Info
GL 85-010	Technical Specification For Generic Letter 83-28, Items 4.3 and 4.4	NA	Applies only to Babcock and Wilcox designed plants

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 85-011	Completion of Phase II of "Control of Heavy Loads at Nuclear Power Plants," NUREG-0612	C	See GL 81-07.
GL 85-012	Implementation Of TMI Action Item II.K.3.5, "Automatic Trip Of Reactor Coolant Pumps"	CI	"Implementation of TMI Item II.K.3.5" – Reviewed in 15.5.4 of original 1982 SER; became License Condition 35. The staff determined that their review of Item II.K.3.5 did not have to be completed to support the full power license and considered this license condition resolved in SSER4. The item was further reviewed in Appendix EE of SSER16. Unit 2 Action: Implement modifications as required.
GL 85-013	Transmittal Of NUREG-1154 Regarding The Davis-Besse Loss Of Main And Auxiliary Feedwater Event	NA	Info
GL 85-014	Commercial Storage At Power Reactor Sites Of Low Level Radioactive Waste Not Generated By The Utility	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 85-015	Information On Deadlines For 10 CFR 50.49, "Environmental Qualification Of Electric Equipment Important To Safety At Nuclear Power Plants"	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 85-016	High Boron Concentrations	NA	Info
GL 85-017	Availability Of Supplements 2 and 3 To NUREG-0933, "A Prioritization Of Generic Safety Issues"	NA	Info
GL 85-018	Operator Licensing Examinations	NA	Info
GL 85-019	Reporting Requirements On Primary Coolant Iodine Spikes	NA	Info
GL 85-020	Resolution Of Generic Issue 69: High Pressure Injection/Make-up Nozzle Cracking In Babcock And Wilcox Plants	NA	Applies only to Babcock and Wilcox designed plants
GL 85-021	This GL was never issued.	NA	
GL 85-022	Potential For Loss Of Post-LOCA Recirculation Capability Due To Insulation Debris Blockage	NA	Info
GL 86-001	Safety Concerns Associated With Pipe Breaks In The BWR Scram System	NA	Boiling Water Reactor
GL 86-002	Technical Resolution of Generic Issue B-19 - Thermal Hydraulic Stability	NA	Boiling Water Reactor
GL 86-003	Applications For License Amendments	NA	Info
GL 86-004	Policy Statement On Engineering Expertise On Shift	C	TVA responded to GL 86-04 on May 29, 1986. TVA provides engineering expertise on shift in the form of a dedicated Shift Technical Advisor (STA) or an STA qualified Senior Reactor Operator.
GL 86-005	Implementation Of TMI Action Item II.K.3.5, "Automatic Trip Of Reactor Coolant Pumps"	NA	Applies only to Babcock and Wilcox designed plants

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ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 86-006	Implementation Of TMI Action Item II.K.3.5, "Automatic Trip of Reactor Coolant Pumps"	NA	Applies only to Combustion Engineering designed plants
GL 86-007	Transmittal of NUREG-1190 Regarding The San Onofre Unit 1 Loss of Power and Water Hammer Event	NA	Info
GL 86-008	Availability of Supplement 4 to NUREG-0933, "A Prioritization of Generic Safety Issues"	NA	Info
GL 86-009	Technical Resolution of Generic Issue B-59, (N-1) Loop Operation in BWRs and PWRs	CT	N-1 Loop operation was addressed in original 1982 SER (4.4.7). Unit 2 Action: Confirm Technical Specifications prohibit (N-1) Loop Operation.
GL 86-010	Implementation of Fire Protection Requirements	NA	Info
GL 86-010, S1	Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area	NA	Info
GL 86-011	Distribution of Products Irradiated in Research	NA	Does not apply to power reactor.
GL 86-012	Criteria for Unique Purpose Exemption From Conversion From The Use of Heu Fuel	NA	Does not apply to power reactor.
GL 86-013	Potential Inconsistency Between Plant Safety Analyses and Technical Specifications	NA	Applies only to Babcock and Wilcox and Combustion Engineering designed plants
GL 86-014	Operator Licensing Examinations	NA	Info
GL 86-015	Information Relating To Compliance With 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important To Safety For Nuclear Power Plants"	NA	Info
GL 86-016	Westinghouse ECCS Evaluation Models	NA	Info
GL 86-017	Availability of NUREG-1169, "Technical Findings Related to Generic Issue C-8, BWR MSIC Leakage And Treatment Methods"	NA	Boiling Water Reactor
GL 87-001	Public Availability Of The NRC Operator Licensing Examination Question Bank	NA	Info
GL 87-002 and GL 87-003	Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, USI A-46	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 87-004	Temporary Exemption From Provisions Of The FBI Criminal History Rule For Temporary Workers	NA	Item was applicable only to units with operating license at the time the item was issued.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 87-005	Request for Additional Information on Assessment of License Measures to Mitigate and/or Identify Potential Degradation of Mark I Drywells	NA	Boiling Water Reactor
GL 87-006	Periodic Verification of Leak Tight Integrity of Pressure Isolation Valves	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 87-007	Information Transmittal of Final Rulemaking For Revisions To Operator Licensing - 10 CFR 55 And Confirming Amendments	NA	Info
GL 87-008	Implementation of 10 CFR 73.55 Miscellaneous Amendments and Search Requirements	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 87-009	Sections 3.0 And 4.0 of Standard Tech Specs on Limiting Conditions For Operation And Surveillance Requirements	NA	Info
GL 87-010	Implementation of 10 CFR 73.57, Requirements For FBI Criminal History Checks	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 87-011	Relaxation in Arbitrary Intermediate Pipe Rupture Requirements	NA	Info
GL 87-012	Loss of Residual Heat Removal While The Reactor Coolant System is Partially Filled	C	This GL was superseded by GL 88-17.
GL 87-013	Integrity of Requalification Examinations At Non-Power Reactors	NA	Does not apply to power reactor.
GL 87-014	Operator Licensing Examinations	NA	Info
GL 87-015	Policy Statement On Deferred Plants	NA	Info
GL 87-016	Transmittal of NUREG-1262, "Answers To Questions On Implementation of 10 CFR 55 On Operators' Licenses"	NA	Info
GL 88-001	NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping	NA	Boiling Water Reactor
GL 88-002	Integrated Safety Assessment Program II	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 88-003	Resolution of GSI 93, "Steam Binding of Auxiliary Feedwater Pumps"	CI	TVA: letter June 3, 1988. NRC letters dated February 17, 1988 and July 20, 1988 NRC: SSER 16 ---------- NRC accepted approach in letter dated July 20, 1988, and reviewed response in Appendix EE of SSER16. Unit 2 Action: Procedures and hardware will be in place to ensure recognition of indications of steam binding and maintenance of system operability until check valves are repaired and back leakage stopped.
GL 88-004	Distribution of Gems Irradiated in Research Reactors	NA	Does not apply to power reactor.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 88-005	Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR plants	CI	NRC acceptance letter dated August 8, 1990 for both units. Unit 2 Action: Implement program.
GL 88-006	Removal of Organization Charts from Technical Specification Administrative Control Requirements	NA	Info
GL 88-007	Modified Enforcement Policy Relating to 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants"	CI	See Special Program for Environmental Qualification.
GL 88-008	Mail Sent or Delivered to the Office of Nuclear Reactor Regulation	NA	Info
GL 88-009	Pilot Testing of Fundamentals Examination	NA	Boiling Water Reactor
GL 88-010	Purchase of GSA Approved Security Containers	NA	Info
GL 88-011	NRC Position on Radiation Embrittlement of Reactor Vessel Material and its Impact on Plant Operations	CI	NRC acceptance letter dated June 29, 1989, for both units. Unit 2 Action: Submit Pressure Temperature curves.
GL 88-012	Removal of Fire Protection Requirements from Technical Specification	NA	Info
GL 88-013	Operator Licensing Examinations	NA	Info
GL 88-014	Instrument Air Supply System Problems Affecting Safety-Related Equipment	CI	NRC letter dated July 26, 1990, closing the issue. Unit 2 Action: Complete Unit 2 implementation.
GL 88-015	Electric Power Systems - Inadequate Control Over Design Process	NA	Info
GL 88-016	Removal of Cycle-Specific Parameter Limits from Technical Specifications	NA	Info
GL 88-017	Loss of Decay Heat Removal	CI	NRC acceptance letter dated March 8, 1995 (Unit 1). Unit 2 Action: Implement modifications to provide RCS temperature, RV level and RHR system performance.
GL 88-018	Plant Record Storage on Optical Disks	NA	Info
GL 88-019	Use of Deadly Force by Licensee Guards to Prevent Theft of Special Nuclear Material	NA	Does not apply to power reactor.
GL 88-020	Individual Plant Examination for Severe Accident Vulnerabilities	O	Unit 2 Action: Complete evaluation for Unit 2.
GL 89-001	Implementation of Programmatic and Procedural Controls for Radiological Effluent Technical Specifications	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 89-002	Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products	C	GL 89-02 did not require a response. WBN Unit 2 program for procurement and dedication of materials is based in part on and complies with the guidance of GL 89-02. The program is implemented through project procedures.
GL 89-003	Operator Licensing Examination Schedule	NA	Info
GL 89-004	Guidelines on Developing Acceptable Inservice Testing Programs	OV	NRC reviewed in 3.9.6 of SSER14 (Unit 1). Unit 2 Action: Submit an ASME Section XI Inservice Test Program for the first ten year interval six months before receiving an Operating License.
GL 89-005	Pilot Testing of the Fundamentals Examination	NA	Info
GL 89-006	Task Action Plan Item I.D.2 – Safety Parameter Display System – 10 CFR 50.54(f)	CI	"Safety Parameter Display System" (SPDS) / "Requirements for Emergency Response Capability" - NRC reviewed in SSER5, SSER6, and 18.2.2 of SSER15. Unit 2 Action: Install SPDS and have it operational prior to start-up after the first refueling outage.
GL 89-007	Power Reactor Safeguards Contingency Planning for Surface Vehicle Bombs	C	TVA: letter dated October 31, 1989 NRC: memo dated June 26, 1990
GL 89-008	Erosion/Corrosion-Induced Pipe Wall Thinning	CI	Unit 1 Flow Accelerated Corrosion Program reviewed in IR 390/94-89 (February 1995). Unit 2 Actions: Prepare procedure and perform baseline inspections.
GL 89-009	ASME Section III Component Replacements	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 89-010	Safety-Related Motor-Operated Valve Testing and Surveillance	CI	NRC accepted approach in September 14, 1990, letter and reviewed in Appendix EE of SSER16. Unit 2 Action: Implement pressure testing and surveillance program for safety-related MOVs, satisfying the intent of GL 89-10.
GL 89-011	Resolution of Generic Issue 101, "Boiling Water Reactor Water Level Redundancy"	NA	Boiling Water Reactor
GL 89-012	Operator Licensing Examination	NA	Info
GL 89-013	Service Water System Problems Affecting Safety-Related Equipment	CI	NRC letters dated July 9, 1990 and June 13, 1997, accepting approach. Unit 2 Actions: 1) Implement initial performance testing of the heat exchangers; and 2) Establish eddy current baseline data for the Containment Spray heat exchangers.
GL 89-014	Line-Item Improvements in Technical Specifications - Removal of 3.25 Limit on Extending Surveillance Intervals	NA	Info
GL 89-015	Emergency Response Data System	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 89-016	Installation of a Hardened Wetwell Vent	NA	Boiling Water Reactor
GL 89-017	Planned Administrative Changes to the NRC Operator Licensing Written Examination Process	NA	Info
GL 89-018	Resolution of Unresolved Safety Issues A-17, "Systems Interactions in Nuclear Power Plants"	NA	Info
GL 89-019	Request for Actions Related to Resolution of Unresolved Safety Issue A-47, "Safety Implication of Control Systems in LWR Nuclear Power Plants" Pursuant to 10 CFR 50.54(f)	CI	TVA responded by letter dated March 22, 1990. NRC acceptance letter dated October 24, 1990, for both units. Unit 2 Action: Perform evaluation of common mode failures due to fire.
GL 89-020	Protected Area Long-Term Housekeeping	NA	Does not apply to power reactor.
GL 89-021	Request for Information Concerning Status of Implementation of Unresolved Safety Issue (USI) Requirements	O	TVA responded to GL 89-21 with the status of USIs for both units on November 29, 1989. NRC provided an assessment of WBN USI status on May 1, 1990. The NRC assessment included a list of incomplete USIs for WBN. USIs were initially reviewed for WBN in the SER Appendix C. USIs were subsequently reviewed in SSER 15 Appendix C (June 1995) and SSER 16 (September 1995). Unit 2 actions: Provide a status of WBN Unit 2 USIs. Complete implementation of USIs.
GL 89-022	Potential For Increased Roof Loads and Plant Area Flood Runoff Depth At Licensed Nuclear Power Plants Due To Recent Change In Probable Maximum Precipitation Criteria Developed by the National Weather Service	C	TVA: letter dated December 16, 1981 ---------- Answer to informal question provided in TVA letter dated December 16, 1981, and subsequently included in FSAR. GL did not require a response. No further action required.
GL 89-023	NRC Staff Responses to Questions Pertaining to Implementation of 10 CFR Part 26	NA	Info
GL 90-001	Request for Voluntary Participation in NRC Regulatory Impact Survey	NA	Info
GL 90-002	Alternative Requirements for Fuel Assemblies in the Design Features Section of Technical Specifications	NA	Info
GL 90-003	Relaxation of Staff Position in Generic Letter 83-28, Item 2.2 Part 2 "Vendor Interface for Safety-Related Components"	NA	Info
GL 90-004	Request for Information on the Status of Licensee Implementation of GSIs Resolved with Imposition of Requirements or CAs	C	TVA responded on June 23, 1990
GL 90-005	Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 90-006	Resolution of Generic Issues 70, "PORV and Block Valve Reliability," and 94, "Additional LTOP Protection for PWRs"	CT	NRC letter dated January 9, 1991, accepted TVA's response for both units. Unit 2 Actions: 1) Revise operating instruction and surveillance procedure; and 2) Incorporate testing requirements in the Technical Specifications.
GL 90-007	Operator Licensing National Examination Schedule	NA	Info
GL 90-008	Simulation Facility Exemptions	NA	Info
GL 90-009	Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions	NA	Info
GL 91-001	Removal of the Schedule for the Withdrawal of Reactor Vessel Material Specimens from Technical Specifications	NA	Info
GL 91-002	Reporting Mishaps Involving LLW Forms Prepared for Disposal	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 91-003	Reporting of Safeguards Events	NA	Info
GL 91-004	Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle	NA	Info
GL 91-005	Licensee Commercial-Grade Procurement and Dedication Programs	NA	Info
GL 91-006	Resolution of Generic Issue A-30, "Adequacy of Safety-Related DC Power Supplies," Pursuant to 10 CFR 50.54(f)	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 91-007	GI-23, "Reactor Coolant Pump Seal Failures" and Its Possible Effect on Station Blackout	NA	Info
GL 91-008	Removal of Component Lists from Technical Specifications	NA	Info
GL 91-009	Modification of Surveillance Interval for the Electrical Protective Assemblies in Power Supplies for the Reactor Protection System	NA	Boiling Water Reactor
GL 91-010	Explosives Searches at Protected Area Portals	NA	Does not apply to power reactor.
GL 91-011	Resolution of Generic Issues A-48, "LCOs for Class 1E Vital Instrument Buses", and 49, "Interlocks and LCOs for Class 1E Tie Breakers," Pursuant to 10 CFR 50.54	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 91-012	Operator Licensing National Examination Schedule	NA	Info
GL 91-013	Request for Information Related to Resolution of Generic Issue 130, "Essential Service Water System Failures @ Multi-Unit Sites"	NA	Addressed to specific (non-TVA) plants.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 91-014	Emergency Telecommunications	NA	Info
GL 91-015	Operating Experience Feedback Report, Solenoid-Operated Valve Problems at U.S. Reactors	NA	Info
GL 91-016	Licensed Operators' and Other Nuclear Facility Personnel Fitness for Duty	NA	Info
GL 91-017	Generic Safety Issue 29, "Bolting Degradation or Failure in Nuclear Power Plants"	NA	Info
GL 91-018	Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability	NA	GL 91-18 has been superseded by RIS 2005-20.
GL 91-019	Information to Addressees Regarding New Telephone Numbers for NRC Offices Located in One White Flint North	NA	Info
GL 92-001	Reactor Vessel Structural Integrity	C	By letter dated May 11, 1994, for both units NRC confirmed TVA had provided the information requested in GL 92-01. NRC issued GL 92-01 revision 1, supplement 1 on May 19, 1995. By letter dated July 26, 1996, NRC closed GL 92-01, revision 1, supplement 1 for both Watts Bar units.
GL 92-002	Resolution of Generic Issue 79, "Unanalyzed Reactor Vessel (PWR) Thermal Stress During Natural Convection Cooldown"	NA	Info
GL 92-003	Compilation of the Current Licensing Basis: Request for Voluntary Participation in Pilot Program	NA	Info
GL 92-004	Resolution of the Issues Related to Reactor Vessel Water Level Instrumentation in BWRs Pursuant to 10 CFR 50.54(f)	NA	Boiling Water Reactor
GL 92-005	NRC Workshop on the Systematic Assessment of Licensee Performance (SALP) Program	NA	Info
GL 92-006	Operator Licensing National Examination Schedule	NA	Info
GL 92-007	Office of Nuclear Reactor Regulation Reorganization	NA	Info
GL 92-008	Thermo-Lag 330-1 Fire Barriers	OV	TVA configurations for Thermo-Lag 330-1 were reviewed in SSER18 and accepted in NRC letter dated January 6, 1998 (includes a supplemental SE). Unit 2 Actions: 1) Review Watts Bar design and installation requirements for Thermolag 330-1 fire barrier system and evaluate the Thermolag currently installed in Unit 2. 2) Remove and replace, as required, or prepare an approved deviation.
GL 92-009	Limited Participation by NRC in the IAEA International Nuclear Event Scale	NA	Info

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 93-001	Emergency Response Data System Test Program	NA	Addressed to specific plant(s).
GL 93-002	NRC Public Workshop on Commercial Grade Procurement and Dedication	NA	Info
GL 93-003	Verification of Plant Records	NA	Info
GL 93-004	Rod Control System Failure and Withdrawal of Rod Control Cluster Assemblies, 10 CFR 50.54(f)	CI	NRC letter dated December 9, 1994, accepted TVA commitments for both units. Unit 2 Action: Implement modifications and testing.
GL 93-005	Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation	NA	Info
GL 93-006	Research Results on Generic Safety Issue 106, "Piping and the Use of Highly Combustible Gases in Vital Areas"	NA	Info
GL 93-007	Modification of the Technical Specification Administrative Control Requirements for Emergency and Security Plans	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 93-008	Relocation of Technical Specification Tables of Instrument Response Time Limits	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 94-001	Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 94-002	Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in BWRs	NA	Boiling Water Reactor
GL 94-003	IGSCC of Core Shrouds in BWRs	NA	Boiling Water Reactor
GL 94-004	Voluntary Reporting of Additional Occupational Radiation Exposure Data	NA	Info
GL 95-001	NRC Staff Technical Position on Fire Protection for Fuel Cycle Facilities	NA	Does not apply to power reactor.
GL 95-002	Use of NUMARC/EPRI Report TR-102348, "Guideline on Licensing Digital Upgrades," in Determining the Acceptability of Performing Analog-to-Digital Replacements under 10 CFR 50.59	NA	Info
GL 95-003	Circumferential Cracking of Steam Generator Tubes	OV	NRC acceptance letter dated May 16, 1997 (Unit 1) – Initial response for Unit 2 on September 7, 2007. TVA responded to a request for additional information on December 17, 2007. Unit 2 Action: Perform baseline inspection.
GL 95-004	Final Disposition of the Systematic Evaluation Program Lessons-Learned Issues	NA	Info

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 95-005	Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking	C	No specific action or response required by the GL; TVA responded on September 7, 2007.
GL 95-006	Changes in the Operator Licensing Program	NA	Info
GL 95-007	Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves	CI	Unit 1 SER for GL 95-07 dated Sept 15, 1999 Unit 2 Action: Perform evaluation for pressure locking and thermal binding of safety related power-operated gate valves and take corrective actions for those valves identified as being susceptible.
GL 95-008	10 CFR 50.54(p) Process for Changes to Security Plans Without Prior NRC Approval	NA	Info
GL 95-009	Monitoring and Training of Shippers and Carriers of Radioactive Materials	NA	Info
GL 95-010	Relocation of Selected Technical Specifications Requirements Related to Instrumentation	NA	Info
GL 96-001	Testing of Safety-Related Circuits	CI	TVA responded for both units on April 18, 1996. Unit 2 Action: Implement Recommendations.
GL 96-002	Reconsideration of Nuclear Power Plant Security Requirements Associated with an Internal Threat	NA	Info
GL 96-003	Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits	CI	No response required Unit 2 Action: Submit Pressure Temperature limits and similar to Unit 1, upon approval, incorporate into licensee-controlled document.
GL 96-004	Boraflex Degradation in Spent Fuel Pool Storage Racks	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 96-005	Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves	CI	SE of TVA response to GL 96-05 dated July 21, 1999. Unit 2 Action: Implement the Joint Owner's Group recommended GL 96-05 MOV PV program, as described in Topical Report No. OG-97-018, and begin testing during the first refueling outage after startup.
GL 96-006	Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions	OV	NRC letter dated April 6, 1999, accepting TVA response for Unit 1. Unit 2 Action: Implement modification to provide containment penetration relief.
GL 96-007	Interim Guidance on Transportation of Steam Generators	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 97-001	Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Closure Head Penetrations	OV	NRC acceptance letter dated November 4, 1999 (Unit 1). Unit 2 Action: Provide a report to address the inspection program.
GL 97-002	Revised Contents of the Monthly Operating Report	NA	Item was applicable only to units with operating license at the time the item was issued.

*** = See last page for status code definition.**

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 97-003	Annual Financial Update of Surety Requirements for Uranium Recovery Licensees	NA	Does not apply to power reactor.
GL 97-004	Assurance of Sufficient Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps	OV	NRC acceptance letter dated June 17, 1998 (Unit 1) – Initial response for Unit 2 on September 7, 2007. Unit 2 Actions: Install new sump strainers, and perform other modification-related activities identical to Unit 1.
GL 97-005	Steam Generator Tube Inspection Techniques	OV	NRC acceptance letter dated September 22, 1998 (Unit 1) - Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Employ the same approach used on the original Unit 1 SGs. TVA responded to a request for additional information on December 17, 2007.
GL 97-006	Degradation of Steam Generator Internals	OV	NRC acceptance letter dated October 19, 1999 (Unit 1) – Initial response for Unit 2 on September 7, 2007. TVA responded to a request for additional information on December 17, 2007. Unit 2 Action: Perform SG inspections during each refueling outage.
GL 98-001	Year 2000 Readiness of Computer Systems at Nuclear Power Plants	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 98-002	Loss of Reactor Coolant Inventory and Associated Potential for Loss of Emergency Mitigation Functions While in a Shutdown Condition	OV	Initial response for Unit 2 on September 7, 2007. Unit 2 Actions: 1) Review the ECCS designs to ensure they do not contain design features which can render them susceptible to common-cause failures; and 2) document the results.
GL 98-003	NMSS Licensees' and Certificate Holders' Year 2000 Readiness Programs	NA	Does not apply to power reactor.
GL 98-004	Potential for Degradation of the ECCS and the Containment Spray System After a LOCA Because of Construction and Protective Coating Deficiencies and Foreign Material in Containment	OV	NRC closure letter dated November 24, 1999 (Unit 1). – Initial response for Unit 2 on September 7, 2007. Unit 2 Actions: Install new sump strainers, and perform other modification-related activities identical to Unit 1.
GL 98-005	Boiling Water Reactor Licensees Use of the BWRVIP-05 Report to Request Relief from Augmented Examination Requirements on Reactor Pressure Vessel Circumferential Shell Welds	NA	Boiling Water Reactor
GL 99-001	Recent Nuclear Material Safety and Safeguards Decision on Bundling Exempt Quantities	NA	Info
GL 99-002	Laboratory Testing of Nuclear Grade Activated Charcoal	NA	Item was applicable only to units with operating license at the time the item was issued.
GL 03-001	Control Room Habitability	OT	Initial response for Unit 2 on September 7, 2007 Unit 2 Action: Incorporate TSTF-448 into Technical Specifications.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
GL 04-001	Requirements for Steam Generator Tube Inspection	OV	NRC acceptance letter dated April 8, 2005 (Unit 1) - Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Perform baseline inspection.
GL 04-002	Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at PWRs	OV	NRC Audit Report dated February 7, 2007 (Unit 1) - Initial response for Unit 2 on September 7, 2007. Unit 2 Actions: Install new sump strainers, and perform other modification-related activities identical to Unit 1.
GL 06-001	Steam Generator Tube Integrity and Associated Technical Specifications	OT	Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Incorporate TSTF-449 into Technical Specifications.
GL 06-002	Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power	OV	Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Complete the two unit baseline electrical calculations and implementing procedures.
GL 06-003	Potentially Nonconforming Hemyc and MT Fire Barrier Configurations	OV	TVA does not rely on Hemyc or MT materials to protect electrical and instrumentation cables or equipment that provide safe shutdown capability during a postulated fire. Unit 2 Action: Addressed in CAP/SP. The Fire Protection Corrective Action Program will ensure Unit 2 conforms with NRC requirements and applicable guidelines.
GL 07-001	Inaccessible or Underground Power Cable Failures That Disable Accident Mitigation Systems or Cause Plant Transients	OV	Initial response for Unit 2 on September 7, 2007. Unit 2 Action: Complete testing of four additional cables.
GL 08-001	Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems	O	[Item 141 in framework letter; input sheet to JEM < 03/27]
NUREG-0737, I.A.1.1	Shift Technical Advisor	NA	Not applicable to WBN per SSER16.
NUREG-0737, I.A.1.2	Shift Supervisor Responsibilities	NA	Not applicable to WBN per SSER16.
NUREG-0737, I.A.1.3	Shift Manning	C	Closed in SSER16.
NUREG-0737, I.A.2.1	Immediate Upgrade of RO and SRO Training and Qualifications	C	Closed in SSER16.
NUREG-0737, I.A.2.3	Administration of Training Programs	C	Closed in SSER16.
NUREG-0737, I.A.3.1	Revise Scope and Criteria for Licensing Exams	C	Closed in SSER16.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, I.B.1.2	Independent Safety Engineering Group	OV	LICENSE CONDITION - Independent Safety Engineering Group (ISEG) (NUREG-0737, I.B.1.2) Resolved for Unit 1 only in SSER8. Unit 2 action: Implement the alternate ISEG that was approved for the rest of the TVA units including WBN Unit 1 by NRC on August 26, 1999. The function will be performed by the site engineering organizations.
NUREG-0737, I.C.1	Short Term Accident and Procedure Review	CI	NRC reviewed in Appendix EE of SSER16. Unit 2 Action: Implement upgraded Emergency Operating Procedures, including validation and training.
NUREG-0737, I.C.2	Shift and Relief Turnover Procedures	C	Closed in SSER16.
NUREG-0737, I.C.3	Shift Supervisor Responsibility	C	Closed in SSER16.
NUREG-0737, I.C.4	Control Room Access	C	Closed in SSER16.
NUREG-0737, I.C.5	Feedback of Operating Experience	C	Closed in SSER16.
NUREG-0737, I.C.6	Verify Correct Performance of Operating Activities	C	Closed in SSER16.
NUREG-0737, I.C.7	NSSS Vendor Revision of Procedures	CI	IR 50-390/391 85-08 closed this item for Unit 1, and NRC also reviewed in Appendix EE of SSER16. Unit 2 Action: Revise power ascension and emergency procedures which were reviewed by Westinghouse.
NUREG-0737, I.C.8	Pilot Monitoring of Selected Emergency Procedures For Near Term Operating Licenses	CI	IR 50-390/391 85-08 closed this item for Unit 1, and NRC also reviewed in Appendix EE of SSER16. Unit 2 Action: Pilot monitor selected emergency procedures for NTOL.
NUREG-0737, I.D.1	Control Room Design Review	OV	NRC reviewed in SSER5, SSER6, SSER15, and Appendix EE of SSER16. Unit 2 Actions: Complete the CRDR process. Perform rewiring in accordance with ECN 5982. Take advantage of the completed Human Engineering reviews to ensure appropriate configuration for Unit 2 control panels. See CRDR Special Program.
NUREG-0737, I.D.2	Plant-Safety-Parameter-Display Console	CI	NRC reviewed in SSER5, SSER6, and 18.2.2 of SSER15. Unit 2 Action: Install SPDS and have it operational prior to start-up after the first refueling outage.
NUREG-0737, I.G.1	Training During Low-Power Testing	C	Closed in SSER16.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, II.B.1	Reactor Coolant Vent System	CI	LICENSE CONDITION - NUREG-0737, II.B.1, "Reactor Coolant System Vents" - In the original SER, the NRC found TVA's commitment to install reactor coolant vents acceptable pending verification. This was completed for Unit 1 only in SSER5 (IR 390/84-37). Unit 2 Action: Verify installation of reactor coolant vents.
NUREG-0737, II.B.2	Plant Shielding	CI	NRC reviewed in Appendix EE of SSER16. Unit 2 Action: Complete Design Review of EQ of equipment for spaces/systems which may be used in post accident operations.
NUREG-0737, II.B.3	Post-Accident Sampling	CT	NRC reviewed in 9.3.2 of SSER16. TVA submitted a TS improvement to eliminate requirements for the Post Accident Sampling System using the Consolidated Line Item Improvement Process in a letter dated October 31, 2001. Unit 2 Actions: Unit 2 Technical Specifications will eliminate requirements for the Post-Accident Sampling System.
NUREG-0737, II.B.4	Training for Mitigating Core Damage	C	Closed in SSER16.
NUREG-0737, II.D.1	Relief and Safety Valve Test Requirements	CI	NRC reviewed in Technical Evaluation Report attached to Appendix EE of SSER15. Unit 2 Actions: 1) Testing of relief and safety valves; 2) Reanalysis of fluid transient loads for pressurizer relief and safety valve supports and any required modifications; 3) Modifications to pressurizer safety valves, PORVs, PORV block valves and associated piping; and 4) Change motor operated block valves.
NUREG-0737, II.D.3	Valve Position Indication	CI	The design was reviewed in the original 1982 SER and found acceptable pending confirmation of installation of the acoustic monitoring system. In SSER5 (IR 390/84-35), the staff closed the LICENSE CONDITION for Unit 1 only. Unit 2 Action: Verify installation of the acoustic monitoring system to PORV to indicate position.
NUREG-0737, II.E.1.1	Auxiliary Feedwater System Evaluation, Modifications	CI	Reviewed in Appendix EE of SSER16. Unit 2 Action: Perform Auxiliary Feedwater System analysis as it pertains to system failure and flow rate.
NUREG-0737, II.E.1.2	Auxiliary Feedwater System Initiation and Flow	CI	NRC: IR 50-390/84-20 and 50-391/84-16; letters dated March 29, 1985, and October 31, 1995; SSER 16 ---------- Unit 2 Action: Complete procedures and qualification testing.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, II.E.3.1	Emergency Power For Pressurizer Heaters	CI	NRC: letters dated March 29, 1985, and October 31, 1995; SSER 16 ---------- Reviewed in original 1982 SER. Unit 2 Action: Implement procedures and testing.
NUREG-0737, II.E.4.1	Dedicated Hydrogen Penetrations	C	NRC: IR 50-390/83-27 and 50-391/83-19; SER (NUREG-0847)
NUREG-0737, II.E.4.2	Containment Isolation Dependability	CT	TVA: letters dated October 29, 1981, and February 25, 1985 NRC: letters dated March 29, 1985, July 12, 1990 and October 31, 1995; SSER 16 ---------- OUTSTANDING ISSUE for NRC to complete review of information provided by TVA to address Containment Purging During Normal Plant Operation LICENSE CONDITION - Containment isolation dependability In the original 1982 SER, NRC concluded that WBN met all the requirements of NUREG-0737, item II.E.4.2 except subsection (6) concerning containment purging during normal operation. In SSER3, the outstanding issue was closed and the LICENSE CONDITION was left open. NRC completed the review and issued a Technical Evaluation Report for both units on July 12, 1990. NRC concluded that the isolation valves can close against the buildup of pressure in the event of a design basis accident if the lower containment isolation valves are physically blocked to an opening angle of 50 degrees or less. (SSER5) Unit 2 Action: Reflect valve opening restriction in the Technical Specifications.
NUREG-0737, II.F.1.2.A.	Accident-Monitoring Instrumentation - Noble Gas	CI	Reviewed in SSER9. Unit 2 Actions: Install Noble gas, Iodine / particulate sampling, and Containment High Range Monitors.
NUREG-0737, II.F.1.2.B.	Accident-Monitoring Instrumentation - Iodine/Particulate Sampling	CI	Reviewed in SSER9. Unit 2 Actions: Install Noble gas, Iodine / particulate sampling, and Containment High Range Monitors.
NUREG-0737, II.F.1.2.C.	Accident-Monitoring Instrumentation - Containment High Range Monitoring	CI	Reviewed in SSER9. Unit 2 Actions: Install Noble gas, Iodine / particulate sampling, and Containment High Range Monitors. ---------- Unit 2 Action: Install high range in-containment monitor for Unit 2.

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ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, II.F.1.2.D.	Accident-Monitoring Instrumentation - Containment Pressure	CI	Reviewed in SSER9. Unit 2 Action: Verify installation of containment pressure indication.
NUREG-0737, II.F.1.2.E.	Accident-Monitoring Instrumentation - Containment Water Level	CI	Reviewed in SSER9. Unit 2 Action: Verify installation of containment water level monitors.
NUREG-0737, II.F.1.2.F.	Accident-Monitoring Instrumentation - Containment Hydrogen	CI	Reviewed in SSER9. Unit 2 Action: Verify installation of containment hydrogen accident monitoring instrumentation.
NUREG-0737, II.F.2	Instrumentation For Detection of Inadequate Core-Cooling	O	LICENSE CONDITION - Detectors for Inadequate core cooling (II.F.2) In the original SER, the review of the ICC instrumentation was incomplete. The January 24, 1992, letter superseded the previous responses on this issue. TVA letter for Units 1 and 2 dated January 24, 1992, committed to install Westinghouse ICCM-86 and associated hardware. NRC completed the review for Units 1 and 2 in SSER10. For Unit 2 due to obsolescence of the ICCM-86 system, TVA intends to install the Westinghouse Common Q Post-Accident Monitoring System. Unit 2 Action: Install Westinghouse Common Q PAM system.
NUREG-0737, II.G.1	Power Supplies For Pressurizer Relief Valves, Block Valves and Level Indicators	CI	Reviewed in original 1982 SER and 8.3.3 of SSER7. Unit 2 Action: Implement modifications such that PORVS and associated Block Valves are powered from same train but different buses.
NUREG-0737, II.K.1.5	Review ESF Valves	C	NRC: letter dated March 29, 1985; SSER 16
NUREG-0737, II.K.1.10	Operability Status	CI	Unit 2 Action: Confirm multi-unit operation will have no impact on administrative procedures with respect to operability status.
NUREG-0737, II.K.1.17	Trip Per Low-Level B/S	C	NRC: letter dated March 29, 1985; SSER 16
NUREG-0737, II.K.2.13	Effect of High Pressure Injection for Small Break LOCA With No Auxiliary Feedwater	C	LICENSE CONDITION – Effect of high pressure injection for small break LOCA with no auxiliary feedwater (NUREG-0737, II.K.2.13) In SSER4, the staff concluded that there was reasonable assurance that vessel integrity would be maintained for small breaks with an extended loss of all feedwater and that the USI A-49, "Pressurized Thermal Shock," review did not have to be completed to support the full-power license. They considered this condition resolved.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, II.K.2.17	Voiding in the Reactor Coolant System	C	LICENSE CONDITION – Voiding in the reactor coolant system (NUREG-0737, II.K.2.17) The staff reviewed the generic resolution of this license condition in SSER4 and approved the study in question, thereby resolving this license condition.
NUREG-0737, II.K.3.1	Auto PORV Isolation	C	Reviewed in SSER5 and resolved based on NRC conclusion that there is no need for an automatic PORV isolation system (NRC letter dated June 29, 1990).
NUREG-0737, II.K.3.2	Report on PORV Failures	C	Reviewed in SSER5 and resolved based on NRC conclusion that there is no need for an automatic PORV isolation system (NRC letter dated June 29, 1990).
NUREG-0737, II.K.3.3	Reporting SV/RV Failures/Challenges	CT	(Action from GL 82-16) – NRC reviewed in Appendix EE of SSER16. Unit 2 Action: Include, as necessary, in Technical Specifications submittal.
NUREG-0737, II.K.3.5	Auto Trip of RCPS	CI	Reviewed in 15.5.4 of original 1982 SER; became License Condition 35. The staff determined that their review of Item II.K.3.5 did not have to be completed to support the full power license and considered this license condition resolved in SSER4. The item was further reviewed in Appendix EE of SSER16. Unit 2 Action: Implement modifications as required.
NUREG-0737, II.K.3.9	PID Controller	CI	Reviewed in original 1982 SER. Unit 2 Action: Set the derivative time constant to zero.
NUREG-0737, II.K.3.10	Anticipatory Trip at High Power	CT	NRC: letter dated October 31, 1995; SSER 16 ---------- Unit 2 Action: Unit 2 Technical Specifications and surveillance procedures will address this issue.
NUREG-0737, II.K.3.12	Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip	C	Closed in SSER16.
NUREG-0737, II.K.3.17	Report On Outage of Emergency Core Cooling System	C	LICENSE CONDITION – Report on outage of emergency core cooling system (NUREG-0737, II.K.3.17) In the original 1982 SER, the NRC accepted TVA's commitment to develop and implement a plan to collect emergency core cooling system outage information. In SSER3, the staff accepted a revised commitment from an October 28, 1983, letter to participate in the nuclear power reliability data system and comply with the requirements of 10 CFR 50.73
NUREG-0737, II.K.3.25	Power On Pump Seals	CI	NRC reviewed and closed in IR 390/84-35 based on Diesel Generator (DG) power to pump sealing cooling system. Unit 2 Action: Ensure DG power is provided to pump sealing cooling system.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, II.K.3.30	Small Break LOCA Methods	CI	TVA: letter dated October 29, 1981 NRC: letters dated March 29, 1985, and July 24, 1986; SSER 16 ---------- The staff determined in SSER4 that their review of Items II.K.3.30 and II.K.3.31 did not have to be completed to support the full-power license and considered this LICENSE CONDITION resolved in SSER4. In SSER5, the staff further reviewed responses to these items, and concluded that the Units 1 and 2 FSAR methods and analysis met the requirements of II.K.3.30 and II.K.3.31. This item was further reviewed in Appendix EE of SSER16. Unit 2 Action: Complete analysis for Unit 2.
NUREG-0737, II.K.3.31	Plant Specific Analysis	CI	The staff determined in SSER4 that their review of Items II.K.3.30 and II.K.3.31 did not have to be completed to support the full-power license and considered this LICENSE CONDITION resolved in SSER4. In SSER5, the staff further reviewed responses to these items, and concluded that the Units 1 and 2 FSAR methods and analysis met the requirements of II.K.3.30 and II.K.3.31. This item was further reviewed in Appendix EE of SSER16. Unit 2 Action: Complete analysis for Unit 2.
NUREG-0737, III.A.1.1	Emergency Preparedness, Short Term	C	LICENSE CONDITION – Emergency Preparedness (NUREG-0737, III.A.1, III.A.2) The NRC review of Emergency Preparedness in SSER13 superseded the review in the original 1982 SER. In SSER13, the staff concluded that the WBN Radiological Emergency Plan (REP) provided an adequate planning basis for an acceptable state of onsite emergency preparedness, and the LICENSE CONDITION was deleted. The NRC completed the review of the REP in SSER20.
NUREG-0737, III.A.1.2	Upgrade Emergency Support Facilities	C	LICENSE CONDITION – Emergency Preparedness (NUREG-0737, III.A.1, III.A.2) The NRC review of Emergency Preparedness in SSER13 superseded the review in the original 1982 SER. In SSER13, the staff concluded that the WBN Radiological Emergency Plan (REP) provided an adequate planning basis for an acceptable state of onsite emergency preparedness, and the LICENSE CONDITION was deleted. The NRC completed the review of the REP in SSER20.
NUREG-0737, III.A.2	Emergency Preparedness	C	LICENSE CONDITION – Emergency Preparedness (NUREG-0737, III.A.1, III.A.2) The NRC review of Emergency Preparedness in SSER13 superseded the review in the original 1982 SER. In SSER13, the staff concluded that the WBN Radiological Emergency Plan (REP) provided an adequate planning basis for an acceptable state of onsite emergency preparedness, and the LICENSE CONDITION was deleted. The NRC completed the review of the REP in SSER20.

* = See last page for status code definition.

ITEM	TITLE	*	ADDITIONAL INFORMATION
NUREG-0737, III.D.1.1	Primary Coolant Outside Containment	OT	Resolved for Unit 1 only in SSER10; reviewed in Appendix EE of SSER16. Unit 2 Actions: Include the waste gas disposal system in the leakage reduction program and incorporate in Unit 2 Technical Specifications.
NUREG-0737, III.D.3.3	In-Plant Iodine Radiation Monitoring	CI	NRC reviewed in Appendix EE of SSER16. Unit 2 Action: Complete modifications for Unit 2.
NUREG-0737, III.D.3.4	Control-Room Habitability	OV	TVA: letter dated October 29, 1981 NRC: SSER 16 ---------- NRC reviewed in SER and in Appendix EE of SSER16. Unit 2 Action: Complete with CRDR completion.

STATUS CODE DEFINITIONS

C: CLOSED: Previous staff review of NUREG-0847 and/or supplements has closed the item either for both units at WBN or explicitly for WBN Unit 2.

CI: CLOSED/IMPLEMENTATION: Staff has approved either for both units at WBN or explicitly for WBN Unit 2; there is no change to the approved design; and implementation is recommended through Regional Inspection.

CT: CLOSED/TECHNICAL SPECIFICATIONS: Item has been approved either for both units at WBN or explicitly for WBN Unit 2; however, a change to the original approval requires submittal of the Technical Specifications and staff review.

NA: NOT APPLICABLE: Justification as to why a section / subsection is not applicable is provided in the ADDITIONAL INFORMATION column.

O: OPEN: No action or documentation is provided that shows the staff has reviewed the item for WBN Unit 2.

OT: OPEN/TECHNICAL SPECIFICATIONS: No action or documentation is provided that shows the staff has reviewed the item for WBN Unit 2, and the resolution is through submittal of a Technical Specification.

OV: OPEN/VALIDATION: The proposed approach has been approved for Watts Bar Unit 1; the same approach is proposed for use on WBN Unit 2 without change.

*** = See last page for status code definition.**

Attachment 4

Corrective Action Program Plans (CAPs)/Special Programs (SPs)

Cable Issues CAP, Silicone Rubber Insulated Cables Sub-Issue

TVA provides the following information to support NRC's review of the silicone rubber insulated cables sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Hi-pot testing of silicone rubber insulated cables manufactured by American Insulated Wire (AIW), Rockbestos, and Anaconda revealed a significant number of failures in AIW cables. For Unit 1, TVA confirmed that no AIW cables were used. Rockbestos and Anaconda cables were successfully tested at Wyle Laboratories for 40-year qualified life.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994, CAP Plan for Cable Issues, Revisions 0 to 3

NRC Approval of Unit 1 Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991

- Supplemental Safety Evaluation 7 (SSER7) of NUREG-0847, Safety Evaluation Report Related to the Operation of WBNP, Units 1 and 2, dated September 1991

- SSER9, June 1992

- NRC letter, February 14, 1994, Watts Bar Unit 1 – Cable Issues Corrective Action Program, Revision 3 (Approval of Revision 3 of the TVA CAP Plan)

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and replacement cable installation will be available for inspection.

7. Interdependencies

None

Cable Issues CAP, Cable Support in Vertical Conduits Sub-Issue

TVA provides the following information to support NRC's review of the cable support in vertical conduit sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

A concern was raised that cables in long vertical conduits were inadequately supported, and that random failures due to cutting of the insulation and conductor creep may occur during normal service conditions, especially for silicone rubber insulated cables.

For Unit 1, TVA identified the critical cases of silicone rubber insulated cables in vertical conduits, with cable bearing pressure occurring at the edge of the condulet the determining factor. A comparison was made of WBN critical cases with those already tested at SQN. If SQN conduits enveloped WBN, no cable testing by WBN was performed. If SQN conduits did not envelope WBN, cable was replaced or in situ cable testing was performed; any cable found unacceptable was replaced. TVA also evaluated Class 1E conduits containing cables of all insulation types and added cable supports when acceptance criteria were not satisfied. In addition, cable installation specification and site procedures were revised to incorporate appropriate cable support requirements for cable installed in vertical conduits, and thereby prevent recurrence.

Conduits that exceeded the support requirements of General Construction Specification G-38 were analyzed, and conduit support points with bearing pressure greater than allowable were inspected and supports added as required.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994

NRC Approval of Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991

- SSER7, September 1991

- SSER9, June 1992
- NRC letter, February 14, 1994

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used. This is acceptable because G-38 requirements are still valid and Unit 2 will utilize installation procedures which point to Unit 1 procedures that implement G-38.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents, existing installations, and installed supports will be available for inspection.

7. Interdependencies

None

Cable Issues CAP, Cable Support in Vertical Trays

TVA provides the following information to support NRC's review of the cable support in vertical trays sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

TVA's specifications require that cables in vertical trays be supported in accordance with the National Electric Code to prevent long-term cable damage and that this support may be provided by tie wraps. However, TVA had no basis to verify that cable ties could provide adequate support.

TVA evaluated the acceptability of various tie wrap configurations as support systems. If a configuration was found to be inadequate, it was shown by analysis, similarity to other installations, or testing that no cable damage had occurred or would occur. Cable support was added when manufacturers' limits were exceeded. To prevent recurrence, TVA revised the cable installation specification and site procedures to identify acceptable methods for support of cables in vertical trays.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994

NRC Approval of Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991
- SSER7, September 1991
- SSER9, June 1992
- NRC letter, February 14, 1994

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used. This is appropriate since National Electrical Code NFPA-70-1987 is part of the licensing bases for both Unit 1 and Unit 2 (see FSAR Section 8.1.5.2).

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents, existing installations, and installed supports will be available for inspection.

7. Interdependencies

None

Cable Issues CAP, Cable Proximity to Hot Pipes Sub-Issue

TVA provides the following information to support NRC's review of the cable proximity to hot pipes sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Cable design did not include the local effects of hot pipes which increase local temperature that can degrade the cable insulation and shorten the life of the cables. For Unit 1, criteria were developed to detail required clearances between cable/raceways and hot pipes/valves to eliminate this potential impact. Class 1E cables were walked down against the criteria to ensure that adequate separation existed between the cables and hot pipes/valves. Deviations were resolved by analysis, change of pipe insulation, or raceway rework.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994

NRC Approval of Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991
- SSER7, September 1991
- SSER9, June 1992
- NRC letter, February 14, 1994

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and field implementation will be available for inspection.

7. Interdependencies

None

Cable Issues CAP, Cable Bend Radius Sub-Issue

TVA provides the following information to support NRC's review of the cable bend radius sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

The minimum bend radius recommended by the Insulated Cable Engineers Association had been violated at WBN. To resolve this issue on Unit 1, TVA established bend radius parameters (upper and lower bounds) for Class 1E cables and revised General Construction Specification G-38 to include the bend radius requirements for cable installation. Cable was then categorized based on 10 CFR 50.49 (Equipment Qualification) requirements, classification and voltage level; and inspected and replaced, retrained, or their qualified life reduced, based on bending or kinking relative to upper and lower bound bend radii.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994

NRC Approval of Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991
- SSER7, September 1991
- SSER9, June 1992
- NRC letter, February 14, 1994

3. Analysis of Conformance

The industry and regulatory requirements incorporated into TVA specifications are still applicable. Additionally, Unit 2 design and installation activities will use procedures that point to Unit 1 procedures which implement G-38. Thus, for Unit 2, the Unit 1 approach,

which is still valid, will be used. Cables with reduced life will be addressed by the Equipment Qualification program.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and field changes will be available for inspection.

7. Interdependencies

None

Cable Issues CAP, Cable Splices

TVA provides the following information to support NRC's review of the cable splice sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

To resolve a concern that the installed splices may not conform to the qualified configurations and materials tested by the vendor, a list of Class 1E cable splices in harsh and mild environments was developed. Cables and splices were identified by reviewing equipment qualification binders and construction records to determine which equipment uses pigtails for field cable connection. All 10 CFR 50.49 harsh environment cable splices requiring Raychem Type N material were replaced, and some mild environment cable splices deemed susceptible to moisture intrusion were reworked. A sampling program was implemented to verify that the splice list was complete for intermediate splices.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 16, 1988, to January 13, 1994

NRC Approval of Approach:

- Safety Evaluation for WB Unit 1 – Corrective Action Program (CAP) Plan for Cable Issues, April 25, 1991
- SSER7, September 1991
- SSER9, June 1992
- NRC letter, February 14, 1994

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used. Splices will be verified by the walkdown of safety related cable.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and field changes will be available for inspection.

7. Interdependencies

None

Cable Tray Supports CAP

TVA provides the following information to support NRC's review of the cable tray supports CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Deficiencies with cable trays and their supports included inadequate tray connections, inconsistencies between as-designed versus as-built tray configurations and their orientation, and failure to evaluate all loading on cable tray members.

The CAP for Unit 1 ensured the structural adequacy and compliance with design criteria and licensing requirements by:

- Review and revision of design criteria.
- Review or development of design output requirements to comply with design criteria and to adequately translate TVA design requirements. This included validation calculations for appropriate loading, typical hardware configurations, and critical cases.
- Walkdown of field configurations to identify deviations from design output.
- Modifications to field conditions, where necessary, to ensure that they are consistent with design output documents.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated November 18, 1988, Corrective Action Program Plan for Category I Cable Tray and Cable Tray Supports

NRC Approval of Approach:

- Safety Evaluation of the WB CAP Plan for Category I Cable Tray and Cable Tray Supports, September 13, 1989
- SSER6, April 1991

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review, and design documents and modified configurations will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to this CAP.

Conduit Supports CAP

TVA provides the following information to support NRC's review of the conduit supports CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Specific structural deficiencies with conduit supports including inadequate conduit clamps, conduit runs supported at only one location, and excessively cantilevered conduit fell into four primary categories:

- Design Basis discrepancies.
- Design output not enveloping all design parameters.
- Installed configurations not in compliance with design documents.
- Discrepancies between as-installed configurations and inspection documentation.

The CAP for Unit 1 ensured the structural adequacy and compliance with design criteria and licensing requirements by:

- Revisions to design criteria.
- Updated design output documents including specifications to factor in changes to design criteria, changes to typical support details, and new support details. Critical case attributes were defined, and critical case evaluations performed to qualify installations.
- Walkdowns - first to support critical case evaluations, then to identify configurations not enveloped by critical cases.
- Modifications, as required.
- Revisions of implementing procedures to ensure the adequacy of new or modified supports and prevent recurrence.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated November 18, 1988, Corrective Action Program (CAP) Plan for Conduit Support Installation

NRC Approval of Approach:

- Safety Evaluation of the WB CAP Plan for Electrical Conduit and Conduit Supports, September 1, 1989

- SSER6, April 1991

3. Analysis of Conformance

The critical case attributes identified for Unit 1 bound the configurations that exist for Unit 2 and will be used for the walkdowns to support critical case evaluations for Unit 2. The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review, and design documents and modified configurations will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to this CAP.

Design Baseline Verification Program (DBVP) CAP

TVA provides the following information to support NRC's review of the DBVP CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

WBN licensing and design basis documentation as well as plant configuration issues included:

- Inconsistencies between the FSAR and WBN design documentation.
- Incomplete and some inconsistent design input information.
- Missing, incomplete, and out-of-date design calculations.
- Inconsistencies between the actual plant configuration and the "as-constructed" drawings.

The causes of these conditions were found to be:

- Lack of effective procedures and databases to ensure that design requirements were properly controlled.
- Insufficient definition of design criteria and system descriptions.
- Lack of a listing to establish the full scope of calculations needed for WBN and inadequate procedures to ensure calculations are properly controlled.
- Lack of an effective process to maintain drawings for configuration control and keep appropriate drawings "as-constructed" as plant changes are made.

The underlying root cause of this situation was determined to be ineffective design and configuration control measures. Based on these issues, the WBN DBVP had four major

components, each having objectives that addressed one or more of the above problems. These were:

- Licensing Verification – to ensure that commitments to NRC are captured in the appropriate controlling document and establish procedures to maintain compatibility between commitments and controlling documents.

- Design Basis Development – to establish design basis documents that contain or reference appropriate engineering requirements and establish procedures to maintain the design basis consistent with the plant, technical requirements, and licensing commitments.

- Calculation Verification – to ensure the existence and retrievability of calculations that are technically adequate and consistent with the "safety-related" plant design and establish a process to status calculations to maintain them current with plant configuration.

- Configuration Control - to develop and implement an improved design change control system with a single set of configuration control drawings (CCDs); and to utilize walkdowns, evaluations, or testing to verify that the functional configurations of the portions of systems that mitigate design basis events are consistent with CCDs.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated October 20, 1988, Corrective Action Program (CAP) Plan for the Design Baseline and Verification Program (DBVP) for Unit 1 and Common Features

- TVA letter dated March 8, 1994, Revision 7 to the CAP Plan for DBVP

NRC Approval of Approach:

- Safety Evaluation Report on the WB Nuclear Performance Plan (WBNPP) – NUREG-1232, Volume 4, December 28, 1989

- Inspection Report 50 390/95-36 dated June 21, 1995

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review; and design basis documents including systems descriptions, calculations, and drawings will be available for inspection.

7. Interdependencies

None

Electrical Issues CAP, Flexible Conduit Installation Sub-Issue

TVA provides the following information to support NRC's review of the flexible conduit installation sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

The problems identified with flexible conduits were:

- Inadequate length to account for seismic/thermal movement
- Lack of compliance with minimum bend radius requirements
- Loose fittings

To resolve these issues for Unit 1, TVA revised design output documents to more specifically define flexible conduit requirements for:

- Seismic/thermal movement
- Minimum bend radius
- Tightness of fittings

A list of flexible conduits attached to Class 1E pipe mounted devices was then developed to identify those flexible conduits that would experience both seismic and thermal movement. Finally, TVA walked down Unit 1 Class 1E flexible conduits and reworked those found to be damaged or in noncompliance with the design output documents.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 CAP Plan for Electrical Issues, September 11, 1989
- NUREG-1232

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and rework of flexible conduit installation will be available for inspection.

7. Interdependencies

None

Electrical Issues CAP, Physical Separation and Electrical Isolation Sub-Issue

TVA provides the following information to support NRC's review of the physical separation and electrical isolation sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

There were isolated cases of redundant closed raceways with less than the minimum required 1-inch separation.

For Unit 1, this issue was subdivided into three issues, and each was resolved separately. The issues were:

- Separation between redundant divisions of Class 1E raceways.
- Internal panel separation between redundant divisions of Class 1E cables.
- Coil-to-contact and contact-to-contact isolation between Class 1E and non-Class 1E circuits.

For inadequate separation between redundant divisions of Class 1E raceways, the raceways were reworked to meet the minimum 1-inch separation requirement, and site implementing procedures were revised to require specific signoffs for raceway separation attributes.

For inadequate internal panel separation between redundant divisions of Class 1E cables, design criteria were revised to include more detailed requirements for internal panel cable separation, an engineering output document was issued to define these requirements, and a list of all panels with redundant divisions of Class 1E cables was developed. Panels containing cables of redundant divisions were walked down to identify cables did not comply with the revised engineering output document, and these were evaluated to determine acceptability or reworked to meet required separation distances.

For coil-to-contact and contact-to-contact isolation between Class 1E and non Class 1E circuits, a calculation was developed to determine acceptability; design criteria were revised to specify acceptable isolation methods; and the existing Class 1E coil and contact devices used as isolators were reviewed to determine that they were qualified for their intended use.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 CAP Plan for Electrical Issues, September 11, 1989
- NUREG-1232

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review. Additionally, design documents, as well as rework and final configuration of raceway installation, will be available for inspection.

7. Interdependencies

None

Electrical Issues CAP, Contact and Coil Rating of Electrical Devices Sub-Issue

TVA provides the following information to support NRC's review of the contact and coil rating of electrical devices sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Issues

Historical Summary

Design and procurements of inductive devices contained in circuits did not consider the inductive load ratings of contacts or the maximum credible voltage available at the device terminals.

To resolve this for Unit 1, TVA reviewed devices that performed inductive load switching, and determined if the contacts had acceptable current ratings and reviewed inductive devices to determine if coils were qualified for the highest and lowest credible voltages. If a device could not be qualified, design output documents were issued to require replacement, and qualified devices were installed.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 CAP Plan for Electrical Issues, September 11, 1989

NUREG-1232 CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and replacement devices will be available for inspection.

7. Interdependencies

None

Electrical Issues CAP, Torque Switch and Overload Relay Bypass Capability for Active Safety-Related Valves Sub-Issue

TVA provides the following information to support NRC's review of the torque switch and overload relay bypass capability for active safety-related valves sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Thermal overload and torque switch bypass capability was not provided for certain active safety-related valves, as recommended by Regulatory Guide 1.106.

For Unit 1, TVA issued design criteria to provide the basis for determining which active valves were required to have their thermal overload relays and torque switches bypassed and issued a calculation to identify these valves. System design criteria or system descriptions were revised to identify which valves within a system require this capability, design output documents were revised to provide the required capability, and thermal overload and torque switch bypasses were installed where they did not already exist and were required.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 CAP Plan for Electrical Issues, September 11, 1989

- NUREG-1232

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and system descriptions, design documents, and bypass installation will be available for inspection.

7. Interdependencies

None

Electrical Issues CAP, Adhesive Backed Cable Support Mounts (ABCSMs) Sub-Issue

TVA provides the following information to support NRC's review of the ABCSM sub-issue for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this sub-issue. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

ABCSMs were used inside equipment to support and restrain wire and field cables in a neat and orderly fashion. The ABCSMs sometimes separated from the inside of the equipment and, as a result, may not have properly secured the wire or cable.

For Unit 1, TVA contacted the vendors of the panels/equipment to ascertain the technical requirements for the ABCSMs for the vendor's wiring, evaluated the use of ABCSMs for field wiring, and issued a calculation identifying the technical requirements for existing ABCSMs. TVA then evaluated the as-installed conditions to determine if any corrective action was required, issued and implemented design output documents in the field to ensure wire or cable were properly secured, and revised site implementing procedures to incorporate the necessary installation requirements and to restrict the use of ABCSMs.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated February 15, 1989, CAP Plan for Electrical Issues

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 CAP Plan for Electrical Issues, September 11, 1989

- NUREG-1232

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the CAP closure documentation for this sub-issue will be available for review, and design documents and ABCSM installation will be available for inspection.

7. Interdependencies

None

Equipment Seismic Qualification (ESQ) CAP

TVA provides the following information to support NRC's review of the ESQ CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Deficiencies in seismic qualification of equipment involved configuration and document control issues and specific technical issues identified by TVA internal reviews.

To provide assurance that Category I and I (L) equipment is seismically qualified, that the qualification documentation is retrievable, and that this documentation is consistent with the design and licensing basis, the ESQ CAP:

- Reviewed design bases to ensure that they were technically adequate and that consistent interfaces existed between them and other design bases.
- Resolved specific technical issues utilizing:
  - Document retrieval
  - Walkdowns to identify and describe required actions
  - Engineering evaluations and modifications when equipment could not be qualified in the as-built configuration
- Developed and populated an ESQ database.
- Performed process improvements to prevent recurrence.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated June 29, 1989 – WBN Equipment Seismic Qualification Corrective Action Program Plan, Revision 1

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 Corrective Action Program Plan for Equipment Seismic Qualification, September 11, 1989
- NUREG-1232
- SSER15, June 1995

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review, and design documents and modified configurations will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to this CAP.

Fire Protection CAP

TVA provides the following information to support NRC's review of the Fire Protection Program CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC concur with TVA's understanding that the approach for this program was approved for both units during Unit 1 completion and that the only NRC actions remaining involve implementation.

2. Current Status of Licensing Review

Historical Summary

The issues that resulted in the determination to initiate the Fire Protection CAP included:

- Fire-rated walls were breached by HVAC ducts without fire dampers, violating Appendix R requirements for fire-rated walls that separate safety-related equipment of redundant trains.

- Review of Sequoyah Nuclear Plant (SQN) Appendix R discrepancies for applicability to WBN.

- Deficiencies with the Safe Shutdown Analysis (SSA).

In response to the above issues and other more specific deficiencies, the Unit 1 Fire Protection Program (for Unit 1 and common areas) contained the following actions:

- Documentation of the measures taken to evaluate violation of the Appendix R requirements and issuance of design change notices (DCNs) to correct the deficiencies.

- Review of SQN Appendix R allegations, as well as issues raised by the NRC during SQN inspections, for applicability to WBN and issuance of DCNs to correct the deficiencies.

- Fire Protection Compliance Review to ensure WBN conformance with NRC requirements and applicable guidelines. The review included:

  - SSA
  - Area Heat-up Analysis
  - Fire Hazards Analysis
  - Lighting and Communication
  - Post-Fire procedures
  - Associated Circuits

- Modification Compliance Review
- Fire Protection Training/Administrative Procedures

The results of the Compliance Review were used as the basis for developing the remaining scope of work (calculations/analysis, DCNs, and document updates) and the consolidation of fire protection documentation into an organized package to support and substantiate the Compliance Review.

The SSA was updated based on the latest "as constructed" plant configuration and the lessons learned from the SQN and Browns Ferry Nuclear Plant (BFN) Appendix R programs.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated March 28, 1990, Revision to CAP Plan for Fire Protection

NRC Approval of Approach:

- SSER18, October, 1995

- SSER19, November, 1995

This CAP plan was approved for both units.

3. Analysis of Conformance

The Fire Protection CAP plan was accepted for both units in SER supplements 18 and 19. On the basis of these considerations, the Unit 1 approach will be used for Unit 2. Additionally, Generic Letter (GL) 92-08, Thermolag 330-1 Fire Barriers, will be resolved for Unit 2 by review of WBN design and installation requirements for Thermolag 330-1 fire barrier systems and evaluation of the Thermolag currently installed in Unit 2. Finally, GL 2006-03, Potentially Nonconforming Hemyc and MT Fire Barrier Configurations, was addressed in TVA letter dated September 7, 2007, Watts Bar Nuclear Plant (WBN) Unit 2 Initial Responses to Bulletins and Generic Letters." In that letter, TVA stated that they do not rely on Hemyc or MT materials to protect electrical and instrumentation cables or equipment that provide safe shutdown capability during a postulated fire.

4. FSAR

None required because the FSAR already includes references to the Fire Protection Program from Unit 1 completion.

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review. Additionally, the analyses that support the Fire Protection Compliance Review and modifications that support this program will be available for inspection.

7. Interdependencies

None

Hanger Analysis and Update Program (HAAUP) CAP

TVA provides the following information to support NRC's review of the HAAUP CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Piping and support deficiencies identified during the design and construction of WBN, as a result of responses to Bulletins 79-02 and 79-14 and internal findings, were incorporated into the following categories:

- Control of Design Input/Output

  - Design input was not consistently defined and controlled.

  - Design output was not clearly defined and, thus, was not consistently implemented by Construction.

- Design/Analysis Methodology

  Design criteria for piping analysis and pipe support design did not specify a consistent and comprehensive set of design/analysis methods. In some cases, relevant industry issues were not considered.

- Level of Design Documentation

  Requirements for closure of unverified assumptions and documentation of engineering judgments were neither fully defined nor procedurally controlled.

The scope of the HAAUP activities for Unit 1 included Seismic Category I piping, Seismic Category I (L) piping, and those instrument lines that could not be decoupled from their process piping and associated supports. Those instrument lines that could be decoupled were addressed in the Instrument Line CAP. The following corrective actions were taken to address the deficiencies:

- Control of Design Input/Output

  – Walkdowns of installed piping and associated pipe supports to obtain as-built information.

- Updating or regeneration of pipe stress and support calculations to:

    - Incorporate changes in the seismic response spectra input to envelope sets B and C, and to add consideration of mass participation above 33 hz.

    - Qualify as-built conditions in design documents.

    - Ensure drawings and calculations are in compliance with current design criteria and procedures.

- Design/Analysis Methodology

  Review of governing criteria and procedures to ensure compliance with industry practices and, where necessary, revision of the implementing criteria and procedures.

- Level of Design Documentation

  Update of design documents to incorporate as-built piping and support configurations and other open items.

Resolution in many cases involved a combination of the above activities and modifications, when required.

<u>History of TVA CAP Plan and NRC Approvals</u>

CAP Plan:

- TVA letter dated June 29, 1989, WBNP – Revision to Corrective Action Program Plan for Hanger Analysis and Update Program

NRC Approval of Approach:

- NUREG-1232

- SSER6, April 1991

- SSER8, January 1992

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review. Additionally, design documents, including as-built drawings, and modified configurations will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to this CAP.

Heat Code Traceability CAP

TVA provides the following information to support NRC's review of the Heat Code Traceability CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Traceability concerns involved ASME loose piping and fitting material and ASTM material installed as welded attachments on ASME piping systems, and were categorized as:

- ASME Class 1 systems that may contain ASME Class 2, Class 3, and/or ASTM piping for which adequate nondestructive examinations (NDE) may not have been performed,

- ASME Class 2 systems that may contain Class 3 piping, and ASME Class 2 and Class 3 systems that may contain ASTM piping for which adequate NDE may not have been performed, and

- ASME systems that may have ASTM plate material attached (welded).

For the Unit 1 program, which included common systems, the following corrective actions were taken:

- Accuracy of the information contained in the Heat Code Database (HCDB) was verified, and this information was used to flag situations where the same ASME material was used in systems of different classifications.

- For Class 1 piping, surface NDE was performed on all piping materials where the heat number was the same as for material used in a non-Class 1 system. When NDE was not feasible, alternate analysis prescribed by the ASME Code was performed. Material which could not be examined or technically justified was replaced.

- For Class 2 and 3 piping, required NDE was performed when classification traceability was questionable and items were installed in locations where stress ratios exceeded 0.80 for welded carbon steel and 0.85 for welded stainless steel. For cases involving ASTM, ASME Section II, and ASME Section III material which may have been upgraded to ASME Section III, Class 2 or 3 materials, the items were reverified as meeting all other requirements of Section III on a sampling basis. Engineering

evaluations were performed on noncomplying items to provide a basis of acceptance. Material determined to be unacceptable was replaced.

- ASTM plate attachment material used in ASME applications was determined to be acceptable by verifying equivalence to an ASME specification, that it was supplied to an acceptable Quality Assurance (QA) program, and the necessary NDE was performed. Material that could not be verified or justified as being acceptable was replaced.

- Recurrence control included revising the General Construction Specification to include specific ASME requirements for reclassification of material and site implementing procedures to require certified material test report traceability of materials to be installed.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated September 21, 1989, Revision to the CAP Plan for Heat Code Traceability

NRC Approval of Approach:

- Inspection Report 50-390/89-09 and 50-391/89-09 dated September 20, 1989

- NUREG-1232

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review. Additionally, results of examination, evaluation, and replacements will be available for inspection.

7. Interdependencies

None

HVAC Duct Supports CAP

TVA provides the following information to support NRC's review of the HVAC duct supports CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Adverse conditions involving HVAC duct and duct supports can be programmatically characterized as: incomplete design basis, inadequate design documents, as-built configurations not in conformance with existing design documents, inadequate or incomplete inspection documentation, and incomplete instructions.

For Unit 1, TVA resolved these issues via the following four tasks:

- Completing the design basis by reviewing and revising the design criteria; issuing supporting calculations and updating the FSAR to be consistent with the upgraded design criteria.

- Updating design output documents to be consistent with the completed design basis.

- Revising construction, maintenance, and QA procedures to incorporate design output documents.

- Developing bounding critical cases of existing installations and evaluating their adequacy, and performing unique evaluations or modifying installations when they could not be qualified by the critical case evaluations.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated November 18, 1988, Corrective Action Program for Heating, Ventilation, and Air Conditioning Duct and Duct Supports

NRC Approval of Approach:

- Safety Evaluation of the WB CAP Plan for Safety-Related Heating, Ventilation, and Air Conditioning Duct and Duct Supports, October 24, 1989

- NUREG-1232
- SSER6, April 1991

3. Analysis of Conformance

Revision to procedures for construction, maintenance, and QA activities will be common to both units, and since they have already been implemented, are considered to be complete. For the remaining activities, the Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review, and design documents and modified configurations will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to this CAP.

Instrument Line CAP

TVA provides the following information to support NRC's review of the Instrument Line CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve this CAP. Additionally, based on the information provided below, TVA requests that NRC approve the elimination of a separate Unit 2 statistically random sample of instrument line supports to address installation discrepancies.

2. Current Status of Licensing Review

Historical Summary

The problems identified with instrument lines fell into two categories:

- Functional problems related to instrument line minimum slope requirements.

- Structural problems related to:

  - Thermal effects
  - Pipe and tube bending devices
  - Compression fittings
  - Installation discrepancies

The scope of the structural issues included Seismic Category I and I (L) instrument lines, and their associated supports, which are analytically decoupled from the process lines.

Sense Line Slope

A number of sense lines were found that did not conform to the minimum slope requirements specified on design output drawings. This resulted in preparation of an Engineering Requirements (ER) Specification; isometric and support drawings; analysis of lines identified for rework; and installation and inspection per design output requirements.

In addition to the ER Specification, other recurrence control measures included site implementing procedures to incorporate ER requirements in the process for the installation, maintenance, and inspection.

Thermal Effects

Instrument lines and associated supports were not designed to consider the effects of thermal expansion, and operating modes indicated that portions of systems will be subjected to thermal effects. These Unit 1 lines were field sketched to identify material, support type, and configuration; then analyzed for dead weight, seismic, and thermal effects. Isometric drawings were prepared showing required line configuration and material, and deficiencies were corrected by design changes.

Pipe and Tube Bending Devices

Site implementing procedures used to qualify pipe and tube bending devices were not rigorously executed, and qualification records for the bending were not always maintained. A sample of bends was evaluated considering wall thickness reduction, ovality, acceptable bend contour, and surface condition and found to be acceptable; and bender qualification records were updated to incorporate the results of the evaluation.

Compression Fittings

Compression fitting installations were found that did not satisfy the manufacturer's installation requirements. Discrepancies included: tubing cuts that were not deburred; tubing that was not bottomed out inside the fittings; nuts that were not properly tightened; and ferrules that were unidentifiable, missing, or reversed.

Discrepant compression fitting installations were vibration and pressure tested. This included testing of the effect on flow rate due to the presence of tubing burrs, testing of the integrity of fittings with various installation deficiencies by tensile pullout, and vibration and seismic tests. The results demonstrated that for the instances where tube ends were not deburred, tubes were not bottomed out, or nuts were not properly tightened, fitting performance was still satisfactory. Also, normal operation vibration testing did not result in leaks in any of the samples tested, and seismic testing only produced very slight leakage in 2 of the 47 samples.

The test program for fittings with missing, reversed, or unidentified ferrules determined that: missing ferrules would cause a definite leak during pressure testing; reversed ferrules would leak if they are "CPI" fittings (manufactured by Parker Hannifin) and would not leak if they are reversed "Hi-Seal" ferrules.

It was determined that for these questionable ferrule installations, unacceptable installations would be detected during pressure testing due to leakage, and for instrument lines that are not pressure tested, there would be no driving force to create any significant leakage. Therefore, the following corrective actions were taken:

- Instrument lines designated as Seismic Category I or I(L) were pressure tested in accordance with appropriate piping code requirements.

- Fittings seeing radioactive service in lines not pressure tested (i.e., drains) were re-inspected to verify installation in accordance with manufacturer's recommendations, and fittings with discrepancies repaired or replaced.

Since pressure testing was performed as required and leaking compression fittings were repaired or replaced, the final configurations were ultimately acceptable.

Installation Discrepancies

Support documentation for some instrument lines was determined to be lost or incorrect. A statistically random sample of over 10,000 instrument line supports installed at the time, including Unit 2 supports on lines that support Unit 1 operation, was selected for a detailed evaluation to determine the acceptability of the as-built condition, and it was determined that the instrument lines and supports would comply with existing design basis requirements provided that the attachment clamps and bolts were properly installed. The supports were then walked down, and proper clamps and bolts were installed in accordance with engineering requirements.

Recurrence controls for each of the above structural issues consisted of revising specifications, design drawings and procedures, and required training.

Revision/Deviation from Unit 1 Approach

Code requirements, design criteria, construction specifications, and site implementing procedures for instrument sensing line used at the time of Unit 1 completion are applicable for resolution of Unit 2 issues. In addition, Unit 2 has installations similar to Unit 1 installations, Unit 2 fabrications used the same drawings where applicable, the same craft worked on both units, and problems had common root causes. Thus, TVA will implement the Unit 1 approach for Unit 2, with the following exception. To resolve the installation discrepancies issue, TVA will not perform an evaluation of a separate random sample of Unit 2 supports since the evaluation performed for Unit 1 was based on a statistically random sample of over 10,000 supports installed at the time, including Unit 2 supports on lines that support Unit 1 operation. The walkdown of supports performed for Unit 2 will use the Unit 1 approach.

History of TVA CAP Plan and NRC Approvals

CAP Plan:

- TVA letter dated March 11, 1994, WBN Unit 1 – Revision to Corrective Action Program Plan for Instrument Lines (R3)

NRC Approval of Approach:

- NUREG-1232

- SSER6, Appendix K, April 1991
- Supplemental SER on the Instrument Line Corrective Action Program, May 6, 1994

3. Analysis of Conformance

The discussion of Revision/Deviation from Unit 1 Approach describes the manner in which the Unit 2 program will be in conformance with requirements.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review. Design documents, including test results, evaluations, and design changes will also be available for review. Reworked and modified configurations will be available for inspection.

7. Interdependencies

None

QA Records CAP

TVA provides the following information to support NRC's review of the QA Records CAP for Unit 2.

1. Proposed Action

Based on the discussion included below, TVA requests the NRC close this CAP.

2. Current Status of Licensing Review

Historical Summary

A number of the quality records required for licensing:

- Were not retrievable in a timely manner or potentially missing.
- Were not maintained in proper storage.
- Had quality problems (were incomplete; technically or administratively deficient).

To address these issues, the QA Records CAP was developed with the following objectives for these records:

- Ensure adequate storage and retrievability.
- Resolve quality and technical problems.
- Ensure programs are established that are adequate to prevent reoccurrence of records problems.

During the course of implementation of the CAP, additional records issues were identified. Evaluation of these issues indicated a need to expand the scope to address the full extent of condition by including a broader set of records categories. This was accomplished through incorporating an Additional Systematic Records Review of all ANSI/ASME N45.2.9, 1974, Appendix A, record types into the CAP. This review was based on sampling and statistical analysis and provided the necessary information to develop procedures to evaluate and correct records considering their significance in the documentation of the quality of safety systems and components. This provided a high level of confidence in the adequacy of QA Records.

Basis for Closure

Relevant Unit 2 records are similar to Unit 1 records, and personnel involved with Unit 1 records were also involved with Unit 2 records. For these reasons, the Unit 2 issues will be similar to those found during the Unit 1 effort. Furthermore, as a result of the

sampling and subsequent evaluation, procedures were put in place to ensure similar problems would be addressed going forward. Since these processes will be used for Unit 2 activities, and these activities cover QA records with the broad scope of CAPs, Special Programs and other design, modification and construction activities; the problems that exist in Unit 2 documentation will be identified and corrected.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated December 21, 1988, to April 6, 1994, WBN Unit 1 – CAP Plan for QA Records, Revisions 0 through 6

NRC Approval of Approach:

- SSER9, June 1992
- WB Unit 1 - Staff Position on Certain Aspects of QA Records CAP, January 12, 1993
- Supplemental Safety Evaluation on the QA Records CAP Plan, April 25, 1994

3. Analysis of Conformance

This item is discussed under Basis for Closure.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, records completed as part of the completion effort will be available for inspection.

7. Interdependencies

None

Q-List CAP

TVA provides the following information to support NRC's review of the Q-List CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

The problems associated with the WBN Q-List Program included:

- Multiple Q-Lists.
- Inadequate training.
- Lack of and improper classifications.
- Wrong component identification.

The objectives of the Q-List CAP were to:

- Develop a new Q-List.
- Compare this new Q-List to the old Q-List to identify upgraded components.
- Review maintenance and modification activities performed since 1984 to ensure that those activities had the appropriate QA program controls applied.

As part of corrective action for this CAP, over 5,000 component classification upgrades were identified during the comparison of the new and old Q-Lists. No field work resulted from these upgraded components.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letters dated October 27, 1988, to July 8, 1993, WBN CAP Plan for Q List (R0 - R5)

NRC Approval of Approach:

- NRC letter – CAP Plan for Quality Assurance List, September 11, 1989
- SSER6, April 1991
- SSER13, April 1994
- Watts Bar Unit 1 - Supplemental Safety Evaluation on the Q-List Corrective Action Program, March 17, 1994 (approving Revision 5 to the CAP plan)

3. Analysis of Conformance

The Unit 1 Q-List will be used as the basis for the Unit 2 Q-List in lieu of comparing a new Q-List to the old Unit 2 Q-List. Unique component identifiers (UNIDs) which are unique to Unit 2 will be evaluated for classification. Components that do not meet this acceptability will be replaced or refurbished to ensure the appropriate quality level. The remaining components will be evaluated for acceptability. Thus, Unit 2 implementation will utilize the Unit 1 Q-List and include an evaluation of existing components.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP and the Q-List will be available for review.

7. Interdependencies

None

Replacement Items CAP

TVA provides the following information to support NRC's review of the Replacement Items CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve this CAP and, instead of back checks of previously installed and/or procured replacement items, plans an extensive refurbishment program which will include ensuring that replacement items have been properly procured, have adequate documentation and are traceable.

2. Current Status of Regulatory Review

Historical Summary

Previous TVA policies and procedures had not adequately directed and controlled engineering involvement in the procurement process used to purchase replacement items, and had not incorporated industry guidance or complied with NRC GLs 89-02 and 91-05.

The CAP grouped the issues into four categories:

- Current and future purchases,
- Current warehouse inventory,
- Plant installed items from previous maintenance activity, and
- Replacement items installed by previous construction activities.

To address these categories, TVA:

- Created the Procurement Engineering Group (PEG), which reviewed and evaluated procurements made for safety-related applications, and developed a process for these activities.
- Created the Material Improvement Project to evaluate the adequacy of current inventory with respect to technical adequacy, QA receipt inspection, and material storage.
- Back checked materials installed from previous maintenance activities to ensure that a proper documentation trail existed from the warehouse to maintenance history for each item.

- Reviewed the construction group's procurements of replacement items. This review indicated that required documentation for parts traceability was available and that the materials were procured properly with engineering involvement.

Revision/Deviation from Unit 1 Approach

Industry practices and regulatory acceptance of those practices at completion of Unit 1 are still applicable now. Several of the actions performed at that time, such as the PEG and evaluation of warehouse inventory (and continued control of dedications), will be common to both units and, since they have already been implemented, are considered complete. For Unit 2, TVA plans an extensive refurbishment program, which will address the replacement items used during prior Unit 2 activities and this process will ensure proper documentation and control of replacement items.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letter dated August 7, 1989, WBN Unit 1 – Revision to CAP Plan for Replacement Items Program (Piece Parts)

- TVA letter dated January 20, 1995, WBN Unit 1 – Revision 6 to CAP Plan for Replacement Items Program

NRC Approval of Approach:

- Safety Evaluation of the WB Unit 1 Plan for the Replacement Items Program, November 22, 1989

- NUREG-1232

- SSER6, Appendix N, April 1991

- NRC letter dated February 6, 1995, Watts Bar Unit 1 – Replacement Items Corrective Action Program Plan

3. Analysis of Conformance

The discussion of Revision/Deviations from the Unit 1 Approach describes the manner in which the Unit 2 program will be in conformance with requirements.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP and evaluations of procurement of spare parts for safety-related applications will be available for review.

7. Interdependencies

None

Seismic Analysis CAP

TVA provides the following information to support NRC's review of the Seismic Analysis CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Concerns were identified with the following aspects of seismic analysis calculations for Category I structures:

- Integration time step used in time history analysis.
- Soil properties and soil-structure interaction.
- Torsional modeling of structures.
- Criteria for the Additional Diesel Generator Building.
- The effect of floor and wall flexibility on design of structures, systems, and components (SSCs) in Category I buildings.

To address these categories, TVA:

- Reviewed seismic analysis criteria and licensing requirements for Category I structures.
- Reviewed seismic analysis calculations for Category I structures and revisions as required or prepared new calculations when necessary.
- Dispositioned identified issues.
- Defined criteria or future evaluations and new designs or modifications of SSCs.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letter dated May 9, 1990, Revision to the CAP Plan for Seismic Analysis (R2)

NRC Approval of Approach:

- Safety Evaluation of WBNP Unit 1 – CAP for Seismic Analysis, September 7, 1989
- Safety Evaluation of WBNP Unit 1 - Validation of SASSI Computer Code for Soil-Structure Interaction Analysis, October, 31, 1989
- NUREG-1232
- SSER6, April 1991

3. Analysis of Conformance

The soils issues addressed by this program for Unit 1 completion involved common structures, and thus Unit 1 resolution closed these issues for both units. Likewise, Unit 1 resolution of the other analysis issues for the common Category I structures (i.e., Auxiliary Building, Diesel Generator Building, and the ERCW Pumping Station) closed these issues for both units. Unit 1 completion also revised the criteria for the Additional Diesel Generator Building to be consistent with the other Category I structures, resolving the analysis issues for this common building as well.

Unit 1 completion resolved these same analysis issues for the Unit 1 specific Category I structures. The applicable regulatory requirements for these issues (integration time steps, soil-structure interaction, torsional modeling, and floor flexibility) have not changed since Unit 1 completion and remain applicable to the Unit 2 configurations. Thus, for the Unit 2 specific Category I structures, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP and calculations to support closure will be available for inspection.

7. Interdependencies

The structural responses and amplified response spectra from the Seismic Analysis CAP are design input to the Cable Tray Support, Conduit Support, HVAC Duct Support, HAAUP, Instrument Sensing Lines, and ESQ program.

Vendor Information CAP

TVA provides the following information to support NRC's review of the Vendor Information CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Problems with vendor information included:

- Vendor information didn't match the plant configuration.
- Vendor information was inconsistent with associated TVA-developed design input/output documents.
- Vendor documents were incorrect or out of date.
- Vendor manuals were lost or were uncontrolled.

The Vendor Information CAP for Unit 1 addressed the problems and their causes via the following actions:

- Relevant vendor information for safety-related and quality-related Unit 1, common, and Unit 2 components needed for Unit 1 operation was identified, reviewed for technical adequacy, and consolidated into applicable vendor technical manuals and documents, which were issued as controlled documents.
- A TVA procedure was issued to control vendor manual update activities.
- Open item reports were generated, tracked, and controlled to resolve the inconsistencies found in the vendor documents.
- Vendor drawings which included information necessary to support safety-related plant activities, but were not in "Approved" status, were reviewed and approved.
- DCNs were issued to resolve identified design discrepancies/open items.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letter dated February 4, 1993, WBN Unit 1 – Revision 4 to CAP Plan for Vendor Information

NRC Approval of Approach:

- WB Unit 1 - Volume 4 NPP, Chapter III, Vendor Information, Safety Evaluation, September 11, 1990

- SSER11, April 1993

3. Analysis of Conformance

Unit 2 equipment identical to Unit 1 will be incorporated in the appropriate lists of existing Unit 1 manuals, and the manuals made common for both units. For equipment that is unique to Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP and affected vendor information for safety-related applications will be available for review.

7. Interdependencies

None

Welding CAP

TVA provides the following information to support NRC's review of the Welding CAP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Programmatic and implementation deficiencies associated with safety-related welding activities resulted in initiation of the TVA Welding Project to review and determine the adequacy of the overall welding program. Subsequently, the Welding CAP was established to ensure that Unit 1 safety-related welds met licensing requirements, and corrective actions were implemented to address the prior issues and those identified by the Welding Project. The CAP included deficiencies that were related to weld quality, inspections, NDE, fabrication/installation code compliance, and associated documentation.

The CAP consisted of three phases:

- A programmatic assessment.
- An in-depth review of the implementation of the welding program and corrective actions to address specific discrepancies.
- Program enhancements to prevent recurrence.

The programmatic assessment and program enhancements to prevent recurrence applied to Unit 2 as well as Unit 1.

The specific deficiencies that had to be addressed for Unit 1 involved structural steel, piping components, pipe supports, instrument panels, HVAC ductwork, and vendor-supplied components such as tanks and heat exchangers. The types of deficiencies included:

- Designs that did not satisfy design criteria for welding.
- Lack of documentation of required visual inspections.
- Indications or weld discontinuities.

- Radiographs accepted with rejectable indications, inadequate radiographic techniques, and identification of discrepancies.

- Misinterpretation of the ASME Code.

- Discrepancies on vendor performed welds.

- Errors on installation documentation.

These problems were addressed by a combination of techniques that included the following:

- Re-inspections to validate results and support analysis.

- Conservative bounding analysis.

- Evaluation of as-is condition to determine acceptability.

- Repairs, if necessary.

History of TVA CAP Plan Submittals and NRC Approvals

CAP Plan:

- TVA letter dated May 12, 1989, WBN – Corrective Action Program Plan for Welding

- TVA letter dated July 31, 1990, WBN - Welding CAP Program – Revisions to CAP Plan and Phase I Weld Report

NRC Approval of Approach:

- Inspection Report Nos. 50-390/89-04 and 50-391/89-04, August 9, 1989

- Letter dated March 5, 1991, WB Unit 1 – Review of Two Submittals Regarding the Welding CAP

- NUREG-1232

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used. Furthermore, generic issues that have been raised since completion of Unit 1 are addressed by TVA responses to generic communications.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this CAP will be available for review. Additionally, results of examination, evaluation, repairs, and accept-as-is conditions will be available for inspection.

7. Interdependencies

None

Concrete Quality SP

TVA provides the following information to support the NRC's review of the Concrete Quality SP for Unit 2.

1. Proposed Action

Based on the discussion included below, the documents referenced and the fact that actions taken address both units, TVA requests the NRC close this SP.

2. Current Status of Licensing Review

Historical Summary

An employee concern identified 24 issues related to concrete that subsequently resulted in the identification of three significant conditions involving concrete quality. They were:

- Some concrete mixes did not meet design compressive strength requirements,
- The use of mortar was not properly controlled, and
- Concrete sampling frequencies did not always comply with the requirements identified in specifications.

To address these issues, TVA performed a study which included a review of concrete cylinder test data to identify potential low-strength concrete placements, testing of cylinder cores in potential low-strength areas, and in-place testing of other low-strength areas. From this information, a database of equivalent in-place concrete strengths was developed for areas having lower strength concrete pours. Concrete drawings and Design Criteria WB-DC-20-11 were revised to reference this database of equivalent in-place concrete strength for lower strength areas.

Basis for Closure

The Concrete Quality SP is complete for both units based on the following considerations:

- The issues associated with concrete quality were not unit specific and involved material used for both units. This is supported by TVA reports CEB-86-19C, Watts Bar Nuclear Plant Concrete Quality Evaluation (identified as being for both Units 1 and 2) and CEB-87-03C, Watts Bar Nuclear Plant – Concrete Quality Evaluation – Testing of In-place Concrete (also identified as being for both Units 1 and 2). Both of these reports are referenced in the NRC inspection report which closed this program and is discussed below. Thus, resolution of these issues constitutes resolution for both units.

- TVA letter August 31, 1990, WBN - Completion of the Concrete Quality Evaluation, stated that based on the staff evaluation in NUREG-1232 the issues on concrete quality at WBN are resolved. While the NUREG only addresses Unit 1, it is based on the same Unit 1 and Unit 2 evaluations.

- An NRC inspection (Inspection Report 390/90-26 and 391/90-26 – January 8, 1991) which followed the TVA letter, included a walkdown inspection of several structures including the Unit 1 and Unit 2 Reactor Building and the Unit 1 and Unit 2 Reactor Containment Shield Structures. This inspection report also indicates that NRR evaluated the above reports prior to issuing their SER dated January 1990, for Unit 1. The inspection concluded that the concrete quality concern issues were resolved. Given that the reports are based on evaluation of testing of concrete from both units and the walkdowns included both units, the conclusions apply to both units.

<u>History of TVA SP Plan Submittals and NRC Approvals</u>

SP Plan:

- TVA letter dated September 6, 1991, WBN - Nuclear Performance Plan Volume 4, Revision 1, Section III.3.1, Concrete Quality Program

NRC Approval of Approach:

- NUREG-1232

3. Analysis of Conformance

See discussion under Basis for Closure.

4. FSAR Documentation

None required because the FSAR already includes a discussion of problems with low concrete strength (see Section 3.8).

5. TS/TRM

No impact.

6. Other Items Required for Inspection

None since Inspection Report 390/90-26 and 391/90-26 closed this issue by inspection.

7. Interdependencies

None

Containment Cooling SP

TVA provides the following information to support NRC's review of the Containment Cooling SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Post-accident pressure and temperature analysis for the lower compartment in containment failed to consider the long-term effects of a main steam line break (MSLB) inside containment for a plant going to hot standby conditions as opposed to cold shutdown. In order to ensure that 10 CFR 50.49(e).1 is satisfied, TVA performed the Containment Cooling Special Program to develop time dependent temperature profiles for the lower compartment, which were then used for equipment qualification (EQ). This was accomplished by the following tasks:

- Correcting the long-term containment temperature profile for the lower compartment considering the design basis MSLB event.
- Upgrading the Lower Compartment Cooler units and associated ducting.
- Evaluating containment coatings transport and replacing nonqualified coatings.
- Using the revised calculated MSLB temperature profile to qualify components in the lower containment that are important to safety.
- Replacing components in the lower compartment to meet 10 CFR 50.49 requirements.

History of TVA SP Plan Submittals and NRC Approvals

SP Plan:

- NPP, Section III.3.2, Containment Cooling

NRC Approval of Approach:

- WB Unit 1 – Supplemental Safety Evaluation of the Special Program on Containment Cooling, May 21, 1991

3. Analysis of Conformance

The Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review. Additionally, evaluation of MSLB for determination of temperature profiles and coatings transport for acceptability, and affected components in containment will be available for inspection.

7. Interdependencies

None

Control Room Design Review (CRDR) SP

TVA provides the following information to support NRC's review of the CRDR SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

The CRDR program was developed to identify and correct human factor discrepancies in the control room. The CRDR included a Preliminary Design Assessment (PDA) to identify any Human Engineering Discrepancies (HEDs) and completion of a full CRDR at a later date.

TVA performed a PDA, and discrepancies identified resulted in commitments to implement corrective actions to resolve these discrepancies, and a CRDR Summary Report was identified as a license condition. TVA conducted the CRDR and submitted a CRDR Summary Report in October 1987 for both units. The CRDR addressed the man-machine interfaces and potential misapplication of human factor principles in the main control room, the auxiliary control room, and the adjacent switch transfer rooms. TVA established a review program plan incorporating accepted human factor principles, gathered and reviewed required plant design information, surveyed the Control Room, identified and assessed HEDs, determined design improvements required, and verified that improvements would address deficiencies and not create new ones.

The CRDR Program ultimately included development of HED corrective actions for Unit 1, common equipment needed for Unit 1, and Unit 2 equipment needed to support Unit 1.

Actions to ensure recurrence controls included issuing Human Factor Design Guides and Human Factor Design Criteria, and the Design Change Process requiring human factors to be addressed.

History of TVA SP Plan Submittals and NRC Approvals

SP Plan:

- TVA letter dated October 2, 1987, WBN – Detailed Control Room Design Review Summary Report

- NPP, Section III.3.3, Detailed Control Room Design Review

NRC Approval of Approach:

- NUREG-1232
- SSER5, November 1990
- SSER6, Appendix L, April 1991 - Safety Evaluation for Units 1 and 2
- SSER15, June 1995

3. Analysis of Conformance

The NRC requirements established for a CRDR that governed the Unit 1 effort have not changed since completion of Unit 1. While there are design differences between the two units that may require differences in design changes, they are similar; and the approach to design changes and correcting deficiencies will be the same. Thus for Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review; and a CRDR summary report, HED corrective actions, and design changes to address human factors will be available for inspection.

7. Interdependencies

None

Equipment Qualification (EQ) SP

TVA provides the following information to support NRC's review of the EQ SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

TVA determined that much of the EQ documentation to support 10 CFR 50.49 requirements was not fully auditable, and in some cases, the documentation available did not demonstrate full qualification. The EQ SP was initiated to document that safety-related electrical equipment installed in the plant was qualified to perform its designated function in the environment to which it will be subjected during normal plant operation as well as during postulated accidents, and that programs and procedures have been established to ensure that qualification is maintained as future plant modifications are made.

The processes put in place to accomplish these objectives included:

- Procedures to maintain EQ over the operating life of the plant.
- Consistent documentation requirements for electrical equipment located in harsh environments and required to function after an accident, and the EQ Documentation Package providing evidence of the qualification of equipment for its specific application and environment.
- Incorporation of EQ considerations into maintenance activities.

The activities performed using these processes were:

Analyses of the effects of pipe breaks on temperature, humidity, dose, and water level at various locations in containment and auxiliary buildings to establish the environmental parameters for all areas of the plant containing equipment that must meet 10 CFR 50.49 requirements:

- Identification of all 10 CFR 50.49 equipment in these areas, the 50.49 list, including electrical equipment located in harsh environment and required to function after an accident. It was developed through a series of steps:

- A systems analysis to determine for each design basis accident those equipment items required to ensure completion of a safety-related function.

- For each item, a review of drawings to identify those ancillary devices and cable required to operate or maintain electrical integrity to ensure completion of the item's safety-related function.

- Reduction of this list by failure analysis to eliminate those components whose failure would not prevent achievement of the required safety action.

- Establishment of EQ binders that contain the qualification information in an auditable manner. A package was developed for each Unit 1 equipment type. The package included:

  - Items comprising the equipment type

  - Checklist for evaluation of qualification

  - Analysis and justification of qualification

  - Qualification documents

  - Field verification data

  - Qualification Maintenance Data Sheets

  - Open items and deficiencies

<u>History of TVA SP Plan Submittals and NRC Approvals</u>

SP Plan:

- TVA letter dated September 30, 1986, Summary Status Update Report TVA's Compliance to 10 CFR 50.49, Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants, Watts Bar Nuclear Plant Unit 1

- TVA letter dated September 6, 1991, WBN - Nuclear Performance Plan, Volume 4, Revision 1, Section III.3.4, Equipment Qualification Program

NRC Approval of Approach:

- NUREG-1232

3. Analysis of Conformance

Processes put in-place to ensure that qualification of equipment is maintained throughout the life of the plant will be common to both units and since they have already been implemented, are considered complete. For the remaining activities, the Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review, and the EQ binders will be available for inspection.

7. Interdependencies

None

Master Fuse List SP

TVA provides the following information to support NRC's review of the Master Fuse List SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Lack of control of over current protection devices and the misapplication of Bussman KAZ actuators as protective devices on the Master Fuse List and the lack of procedural guidance for the development of the Master Fuse List resulted in design and configuration control deficiencies.

This SP included three primary elements to resolve these deficiencies:

- To address configuration control deficiencies, a baseline Master Fuse List was developed using design input to establish a comprehensive list of 1E fuses needed to support the operation of Unit 1 systems; then walkdowns were performed to gather as-installed information to be included on the list.

- To resolve the Bussman KAZ actuator misapplication, a review of schematic and connection drawings identified KAZ locations, and a DCN was developed to replace KAZ devices with conventional fuses.

- To correct deficiencies involving redundancy provided to electrical penetration assemblies, an analysis was conducted to verify that redundant protection was provided and, when not the case, identified deficiencies were corrected.

While the principle focus of the program was on 1E safety-related equipment, the program has evolved to establish similar controls and practices for all fuses needed to support the operation of the station.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- NPP, Section III.3.5 – Master Fuse List

- TVA letter dated July 31, 1990, Response to Concerns in NRC SER for WBN NPP Volume 4 – Master Fuse List

- TVA letter dated May 31, 1991, Response to NRC Supplemental SER Concerning the WBN NPP on the Master Fuse List

NRC Approval of Approach:

- NUREG-1232

- NRC letter dated February 6, 1991, WB Unit 1 – Special Program on Master Fuse List

- SSER9, Appendix U, June 1992 - CAP on the Master Fuse List

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review; and the Master Fuse List, devices used to replace KAZ actuators, and penetration deficiencies will be available for inspection.

7. Interdependencies

None

Mechanical EQ (MEQ) SP

TVA provides the following information to support NRC's review of the MEQ SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

The MEQ Program included a documented evaluation of the ability of safety-related mechanical equipment located in harsh environment to perform its intended functions, as required by GDC-4 of Appendix A of 10 CFR 50.

The Unit 1 program utilized existing temperature and dose conditions developed for electrical equipment to satisfy 10 CFR 50.49. The program then identified active safety-related mechanical equipment located in harsh environments; analyzed the non-metallic subcomponents for effect of thermal and radiation conditions; produced controlled binders to establish and maintain qualified status for life of plant; and issued DCNs to modify the plant consistent with qualification tests and analyses.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- NPP, Section III.3.6 – Mechanical Equipment Qualification

NRC Approval of Approach:

- NUREG-1232
- SSER15, June 1995

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review; and the MEQ binders, design documents, and modifications will be available for inspection.

7. Interdependencies

None

Microbiologically Induced Corrosion (MIC) Special Program (SP)

TVA provides the following information to support NRC's review of the MIC SP for Unit 2.

1. Proposed Action

TVA requests that the NRC concurs with TVA's understanding that the approach for this program was approved for both units during Unit 1 completion and that the only NRC actions remaining involve implementation.

2. Current Status of Licensing Review

Historical Summary

Due to leakage events in several water systems including Essential Raw Cooling Water and MIC degradation at other TVAN plants, TVA committed to a corporate program to address MIC in 1987. In addition, TVA committed to specific actions to address requirements of NRC GL 89-13, "Service Water System Problems Affecting Safety-related Equipment," and the potential for existing MIC conditions in Unit 1.

The SP for Unit 1 included:

- Identifying systems potentially affected by MIC.
- Performing visual inspections and assessing MIC-infested locations.
- Using pre-existing NDE results to identify vulnerable locations.
- Repairing unacceptable damage to Code requirements.
- Installing improved biocide treatment and a long-term chemical cleanup system.

This was later augmented by the implementation of Standard Programs and Process (SPP) 9.7, "Corrosion Control Program," which specifies the programmatic and organizational requirements for management of the MIC and Macrofouling Program.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- TVA letter dated February 26, 1991, WBN - Microbiologically Induced Corrosion Program Report
- NPP, Section III.3.7 – Microbiologically Induced Corrosion

NRC Approval of Approach:

- SSER8, Appendix Q, January 1992, Safety Evaluation for WBN Units 1 and 2
- SSER10, Appendix Q, October 1992, SSE for WBN Units 1 and 2

3. Analysis of Conformance

The biocide injection system and corrosion monitoring equipment already installed at WBN are common for both units. In addition to these factors, the SP was approved for both units in SSER8 and 10. Thus, for the remaining programmatic actions, the Unit 1 approach, which is still valid, will be used for Unit 2.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review. Additionally, inspection and evaluation results for the systems identified as potentially affected by MIC, repair of damage, and the systematic and programmatic actions to prevent recurrence will be available for inspection.

7. Interdependencies

None

Moderate Energy Line Break (MELB) Flooding SP

TVA provides the following information to support NRC's review of the MELB flooding SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

For moderate energy lines, documentation did not adequately justify that there were no unacceptable consequences as a result of flooding in a Category I structure outside of containment following an MELB.

For Unit 1, essential equipment and structures were evaluated to ensure that they were either unaffected by postulated flooding due to an MELB, or were designed, specified, and/or qualified for the environment caused by such flooding. The evaluation involved pipe break analyses, determination of postulated break locations, determination of postulated flooding levels, and EQ evaluations. In those instances where it was determined that an item was impacted and it could not be qualified, modifications providing curbs, raising junction boxes, and adding or removing weather stripping were performed.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- NPP, Section III.3.8 – Moderate Energy Line Break (MELB) Flooding

NRC Approval of Approach:

- NUREG-1232
- SSER11, April 1993

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure document for this SP will be available for review, and evaluation results and modifications will be available for inspection.

7. Interdependencies

None

Radiation Monitoring System (RMS) SP

TVA provides the following information to support NRC's review of the RMS SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historic Summary

RMS deficiencies involved RMS design, documentation, installation, and hardware and are categorized in three areas of concern. These are:

- Sample line deficiencies involved line length, heat tracing, minimum bend radius, slope, and separation requirements.
- Design and documentation deficiencies involved:
  - Design of sample flow equipment.
  - Purge capability following an accident.
  - System interlocks with containment isolation in the containment upper and lower compartment monitor design.
  - Documentation of modifications to RMS rate meters.
  - RMS rate meter cable damage.
- Inadequate documentation of primary calibration records and uncertainty in the validity of equipment calibration.

The actions to address these deficiencies for Unit 1 were to review and update the RMS design basis, including applicable requirements of Regulatory Guide 1.97; evaluate the RMS against this design basis; and implement modifications to correct RMS deficiencies. This also included an evaluation of the RMS design, documentation, and installations against the updated design criteria to verify the acceptability of the installation or to identify required modifications for those monitors included in the TSs and modifications or reworking of existing documentation to correct identified documentation deficiencies.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- NPP, Section III.3.9 – Radiation Monitoring

NRC Approval of Approach:

- NUREG-1232

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review. Additionally, design bases documents, evaluations, design changes, and acceptable existing installations will be available for inspection.

7. Interdependencies

None

Soil Liquefaction SP

TVA provides the following information to support the NRC's review of the Soil Liquefaction SP for Unit 2.

1. Proposed Action

Based on the discussion included below, the documents referenced and the fact that actions taken address both units, TVA requests the NRC close this SP.

2. Current Status of Licensing Review

Historical Summary

The potential for soil to liquefy is a design consideration at WBN, and the Soil Liquefaction SP was implemented to ensure that issues regarding the design and construction of soil mitigating measures on the west side of the Intake Pumping Station were addressed. The actions taken as part of this program were an evaluation of issues in three areas:

- Alternate material used for backfill,
- Incomplete excavation of potentially liquefiable sand, and
- Leakage between the intake pumping station and Trench B.

To address these issues for Unit 1, TVA conducted an investigation as well as an independent investigation that was performed by R. L. Cloud and Associates with review by the late H. B. Seed of University of California, Berkeley (a noted expert in the area of soil liquefaction). Based on these investigations, it was concluded that the issues did not have a detrimental effect on liquefaction mitigation measures.

Basis for Closure

The Soil Liquefaction Program is complete for both units based on the following considerations.

The area of the plant which was of concern was the west side of the intake pumping station (see Figure 2.1.5 in the FSAR, Amendment 91) and involved a common system and structure. No other area had this concern.

The NRC documented their review and acceptance that the WBN underground barriers provide sufficient confinement for liquefied soil in the affected area in SER Supplement No. 3. The NRC endorsed the approach for the Soil Liquefaction SP by NUREG-1232, subject to inspection of TVA's actions. Final inspection accepting the completion of this

program for both units was reported in NRC Inspection Report 390/92-45 and 391/92-45, February 17, 1993.

History of TVA CAP Plan Submittals and NRC Approvals

SP Plan:

- TVA letter dated September 6, 1991, WBN - Nuclear Performance Plan Volume 4, Revision 1, Section III.3.10, Soil Liquefaction

NRC Approval of Approach:

- NUREG-1232

3. Analysis of Conformance

See discussion under Basis for Closure.

4. FSAR Documentation

None required because the FSAR already includes a discussion of problems with Soil Liquefaction (see Sections 2.5.4, 2.5.5, and 3.7.3).

5. TS/TRM

No impact.

6. Other Items Required for Inspection

None since the Inspection Report closed this issue by inspection.

7. Interdependencies

None

Use-As-Is Condition Adverse to Quality (CAQ) SP

TVA provides the following information to support NRC's review of the Use-As-Is CAQ SP for Unit 2.

1. Proposed Action

TVA requests that the NRC review and approve the approach for closing this program. For Unit 2, TVA will use the Unit 1 approach to resolve it.

2. Current Status of Licensing Review

Historical Summary

Engineering at WBN identified that use-as-is and repair nonconformance dispositions were not reflected on drawings; there was inadequate justification for disposition of these types of nonconformances; and no project-level procedural guidance was provided for use-as-is and repair dispositions. The Use-As-Is CAQ SP was initiated to address these issues.

To prevent recurrence, engineering procedures were issued to establish the requirements for handling CAQs including ensuring that design documents reflect the approved configuration for any use-as-is or repair disposition, and that the basis for approval of any use-as-is or repair dispositions be documented.

For Unit 1, this was followed by the identification of CAQs that had a final disposition of either use-as-is or repair and technical reviews of the latest revision of design documents considering the impact of the CAQ.

<u>History of TVA CAP Plan Submittals and NRC Approvals</u>

SP Plan:

- TVA letter dated September 14, 1988, WB Unit 1 and Unit 2 Use-As-Is and Repair Dispositions for Construction Nonconformance Reports – WBRD-50 390/87-05 and WBRD-50-391/87-05 Final Report

- TVA letter dated September 6, 1991, WBN - NPP Volume 4, Revision 1, Section III.3.11, Use-As-Is Special Program

NRC Approval of Approach:

- NUREG-1232

3. Analysis of Conformance

For Unit 2, the Unit 1 approach, which is still valid, will be used.

4. FSAR

None

5. TS/TRM

None

6. Other Items Requiring Inspection

Prior to fuel load, the closure documentation for this SP will be available for review, and design documents and acceptable existing installations will be available for inspection.

7. Interdependencies

None

ENCLOSURE 2
SCREENING QUESTIONS INCORPORATED INTO UNIT 2 DESIGN CONTROL PROCESS

1. Does the change/activity to be implemented for Unit 2 impact or invalidate a previous NRC review within NUREG-0847 and its Supplements causing the status of an item listed in the TVA Regulatory Framework Letter to change?

2. Does the change/activity to be implemented for Unit 2 differ from the original Unit 1 change such that it impacts or invalidates a previous NRC review within NUREG-0847 and its Supplements causing the status of an item listed in the TVA Regulatory Framework Letter to change?

3. Does the change/activity involve any of the Corrective Action Program Plans/Special Programs approved by NRC for Unit 2 such that it impacts or invalidates a previous NRC review causing the status of an item listed in the TVA Regulatory Framework Letter to change?

4. Does the Unit 1 configuration change/activity for multi-unit operation to be implemented for Unit 2 impact or invalidate a previous NRC review within NUREG-0847 and its Supplements causing the status of an item listed in the TVA Regulatory Framework Letter to change?

5. Does the change or activity to be implemented for Unit 2 involve an exemption, relief, or other actions that were not previously reviewed and approved by NRC for Unit 2?

6. Does the change or activity to be implemented for Unit 2 impact or invalidate a Generic Issue resolution previously reviewed and approved by NRC causing the status of an item listed in the TVA Regulatory Framework Letter to change?

ENCLOSURE 3

TVA WATTS BAR UNIT 2
COMPLETION PROJECT PROCEDURE
25402-000-GPP-0000-TI216, "WATTS BAR UNIT 2 COMPLETION PROJECT REFURBISHMENT PROGRAM"

TVA WATTS BAR NUCLEAR UNIT 2
CONSTRUCTION COMPLETION PROJECT
PROCEDURE

Unit 2

Construction Refurbishment (CRF)

25402-000-GPP-0000-TI216

Watts Bar Unit 2 Completion Project Refurbishment Program

Revision 0000

Level of Use: Information Use

Quality Related: Yes ☑ No ☐ ASME: Yes ☑ No ☐

Effective Date: 11/05/2008

Responsible Organization: Construction Refurbishment (CRF)

Prepared by: EE Barels EEB

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Concurred by: CM [illegible] Date: 10/29/2008

Concurred by: PQAM [illegible] Date: 11/4/08

Concurred by: TVA-CM Brian M Brady Date: 11/04/2008

Concurred by: TVA-PQAM Paul Barnes Date: 11/5/08

MQS (BECHTEL) [illegible] for MQS DATE: 11/4/08

DE S.T. PE David W. Turner 11/4/08 DATE: 11/4/08

Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	11/05/2008	All	Initial issue.

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Appendix A: Typical Refurbishment Activities **10**

1.0 PURPOSE

This instruction provides the guidance for the Watts Bar Unit 2 project refurbishment/restoration program. Since many of the components have been installed since construction began, and since layup activities were terminated for a period of time, it is necessary to perform the examinations, refurbishment, restorations, and testing required to assure the components meet or exceed their original specifications.

General instructions are provided for the types of activities that may be required, but detailed technical instructions, specifications for vendor performed activities, types of tests or inspections to be done, refurbishment scope determination and approval, etc. will be provided in lower tier implementing instructions. The specific activities required for a given component will require review of the design requirements and specifications, vendor manuals and information, applicable code requirements, etc.

2.0 SCOPE

This instruction applies to WBN Unit 2 safety related components, quality related components, and plant critical components of non-quality related systems.

Implementation of the program described in this instruction will be accomplished via a combination of on-site and off-site component refurbishment and/or replacement activities.

3.0 DEFINITIONS

Inspections - disassembly to the extent necessary to verify or measure critical attributes (which may be affected by time), cleanliness, conditions of bearing or seating surfaces or components.

Cleaning - Removal of dirt and other contaminants using pressurized air, water, approved solvents, etc., as necessary. System/component flushes, as part of the startup testing program, may be credited where applicable.

Lubrication - Removal of old grease/oil from reservoirs, bearings, and other lubricated components and replacement with vendor specified or other engineering approved lubricants.

Parts Replacement - Replacement of degraded "soft" parts which would potentially fail over time, such as gaskets, packing, elastomers, etc.

Refurbishment - Used synonymously with "restoration". Performance of activities to restore a component to its original specifications.

3.0 DEFINITIONS (continued)

Testing - Industry standard or special component tests intended to demonstrate compliance with specifications and requirements.

In general, testing will be demonstrated by activities at the construction/refurbishment, component, system, and integrated phases. Pre-operational system and other integrated system tests, while a demonstration of overall system and component readiness for operation, will not be tracked by this program.

EXAMPLES for Refurbishment Program;

1) Bridge, megger, hi-pot testing, motor rotation, etc. of large high voltage motors
2) Bench set, smooth stroke through full travel range, no air leaks, etc. for Air Operated Valves

4.0 REFERENCES

4.1 Performance References

None

4.2 Developmental References

A. Watts Bar Unit 2 Construction Completion Project Bechtel Nuclear Quality Assurance Manual (PNQAM)

B. Bechtel Nuclear Quality Control Manual (NQCM)

C. Bechtel Construction Operations Incorporated (BCOI) Bechtel Quality Assurance Manual (BQAM) ASME Section III Division 1

D. Construction Completion Project Procedure 25402-000-GPP-0000-N1206, Work Order Processing

E. Construction Completion Project Procedure 25402-000-GPP-0000-N1302, Refurbishment Group Expectations and Responsibilities

F. TVA Procedure SPP-9.2, Equipment Environmental Qualification (EQ) Program

G. Construction Completion Project Procedure 25402-000-GPP-0000-N3505, Piping System Cleanliness

H. NEI 95-10, Appendix B, Typical Structure, Component and Commodity Groupings and Active/Passive Determinations for the Integrated Plant Assessment

5.0 RESPONSIBILITIES

Construction Manager (CM)

- The CM is responsible for approval of this procedure.
- The CM is responsible for ensuring that the requirements of this procedure are properly implemented.

Project Field Engineer (PFE)

The PFE is responsible for:

- Assigning and supervising the Field Engineering personnel assigned to provide technical support.
- Assuring that assigned personnel have the required training and experience to implement the requirements of this procedure.
- Implementing this procedure and providing project direction and technical assistance for the Refurbishment Field Engineers.

Project Field Quality Control Engineer (PFQCE)

Responsible for providing technical and administrative guidance to Quality Control Engineer (QCEs). The PFQCE is the primary contact with the ANI on the project site.

Quality Control Engineer (QCE)

- Perform quality related inspections for those activities that are classified as Safety Related and Quality Related.
- Prepare quality control documentation and maintain quality control records.

Refurbishment Field Engineer

Prepares a listing of initial scope of components in accordance with the scope of this procedure. Proposes a determination of refurbishment requirements. Ensures, after approval of the scope and evaluation, that WO's are prepared to accomplish the activities and are in a retrievable database type program.

Project Refurbishment Group Manager

Responsible for direction and oversight of the refurbishment group, including processes for scope identification and control, work item evaluations, work order planning and execution, and tracking of item completion.

5.0 RESPONSIBILITIES (continued)

Project Engineering

Reviews and concurs with the scope determination and refurbishment evaluations. Provides program level input and oversight. Identifies conflicts between engineering programs and refurbishment activities (i.e. - 89-10 program for Motor Operated Valves (MOV's)), recommending delays in appropriate refurbishments until engineering activities are complete.

6.0 REQUIREMENTS

6.1 General Requirements

It is critical that all personnel performing activities associated with construction completion at WBN2 be aware of the importance of maintaining "Unit Separation" and have no effect on Unit 1 or common systems and components. Refer to TVA procedure TI-404, *Unit Two Separation, Construction, and Startup."*

In general, refurbishment will involve inspections, cleaning, testing, lubrication, replacement of shelf life limited parts (such as gaskets, packing, elastomers etc.) In some cases, it may be more economical to replace whole components rather than refurbish. Consideration must be given to specific engineering requirements such as environmental qualification (EQ) when establishing the refurbishment activities required for specific components. Lessons learned for reliability issues noted during Unit 1 operation will also be considered while establishing refurbishment activities for a given component.

6.2 Exclusions

Cleanliness of piping systems will be established during flushes in accordance with Startup flushing procedures. (See Reference 4.2G).

Cables will be tested to industry standard construction tests (megger/hi potential) during the construction testing program and will not be tracked by this program.

Passive features, such as structural steel, concrete, foundations, baseplates, anchorage, etc., will be walked down and evaluated as applicable during the baseline verification program by engineering and will not be tracked by this program.

6.3 Process

A Refurbishment Scope Determination will be prepared by the assigned refurbishment group individual for each system listing the components which will/will not be refurbished or restored. Project Engineering will review for concurrence with the scope determination.

6.3 Process (continued)

A Refurbishment Evaluation (from Reference 4.2E) will be prepared for each component determined to require refurbishment, to record applicable information on the component such as, the specific refurbishment activities to be performed, special considerations, work documents and/or procedures to be utilized, and the basis for the determination.

Concurrence of the Refurbishment Evaluation will be obtained from Project Engineering. Additional approvals from program owners or special inspections (EQ, Generic Letter (GL) 89-10, ANI, etc.) may be specified by project engineering and obtained when applicable. Complete component replacement will not require engineering or program owner approval when specified.

The specified refurbishment requirements will be implemented in accordance with Reference 4.2D. Typical refurbishment activities for various types of plant equipment are listed in Appendix A.

Lay-up maintenance evaluations will be performed and implemented for those components which are subject to vendor recommendations and/or Engineering Requirements Specifications through the Construction phase of Unit 2 completion.

6.4 Special Requirements

Refurbishment of ASME Section III components will require reference to the original Code Data Report (ASME Form NPV-1 or N-1). For ASME Section III components, the scope of work must be reviewed to determine whether the work includes ASME Section III activities. These activities are generally limited to repair by welding of pressure boundary items, nondestructive examinations required by ASME Section III, and replacement of pressure boundary parts or material. Mechanical disassembly, reassembly, replacement of gaskets, seals, and bearings are not ASME Section III activities. Although refurbishment of ASME Section III components will require Quality Control (QC) review, only the ASME Section III activities require Authorized Nuclear Inspector (ANI) review. Generally, any component disassembly for inspection and restoration activities must be at the component designed disassembly points (i.e. - bolted or flanged surfaces). The ASME Section III work, where required will be documented on an N-5 Data Report by an ASME Certificate Holder. This Data Report will be utilized to supplement the Original Equipment Manufacturer (OEM) Data Report for the component.

7.0 RECORDS

No QA records are created by this procedure. Documents described in this process are controlled by their respective governing program document requirements.

8.0 ATTACHMENTS

A. Appendix A - Typical Refurbishment activities

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Typical Refurbishment Activities

1.0 PUMPS

Each pump will be refurbished to OEM acceptable conditions. Each pump will be inspected and cleaned, consumables replaced (mechanical EQ requirements performed, if applicable) and tested through the component and system test programs. This testing will verify that the refurbished equipment meets its required specifications. Any parts that are found to be unacceptable will be reworked or replaced. Identified missing parts will be replaced with a like component or an approved equivalent. Known concerns are bearing flat spots, corrosion inhibitor and surface rust on shafts and couplings. Some pumps have been disassembled or parts removed to support the operation of other units. Complete replacement pumps or rotating elements will be required to complete reassembly of some pumps.

2.0 MOTORS

A. **Large Motors**: (Greater than 100 HP)

Large motors will be refurbished returning equipment to OEM acceptable conditions, ensuring EQ requirements are performed if applicable. Inspections of the bearings, windings, insulations, and air baffles will be performed during the refurbishment, replacing or cleaning as needed. Rework/inspect sight glasses replacing soft parts ensuring no leaks upon completion. Oil reservoirs and associated piping will be cleaned and inspected. Perform electrical test on each motor ensuring bridge, motor rotation, megger and DC step voltage check are included in the testing.

B. **Small Motors**: (less than 100 HP)

Safety related motors, if not replaced, will be inspected, cleaned, consumables replaced and returned to OEM acceptable conditions. EQ requirements will be performed if applicable. Expectation is that a portion of bearings will be replaced based on field inspections. Non safety related motors will be inspected and a decision made to accept "as-is", refurbish or replace, depending on cost and condition of equipment.

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3.0 BREAKERS

A. **Molded case breakers:**

Molded case breakers that are designed to carry Unit 2 loads will be replaced with a new breaker either by refurbishment or a design change. Replacement is based on review of correction action program from Unit 1, vendor recommendation, and Operating Experience. New molded case breakers will be tested per site requirements prior to arriving on site.

B. **480V DS breakers**:

Refurbishment is due to breakers not being maintained and will require an overhaul in accordance with vendor requirements and/or industry practices. Post Refurbishment Testing will be performed in accordance with site breaker test procedures.

C. **6.9KV GE Rack up breakers**:

Refurbishment is due to breakers not being maintained or they have been removed from Unit 2 and will require an overhaul/replacement in accordance with vendor requirements and/or industry practices. Post Refurbishment/Replacement Testing will be performed in accordance with site breaker test procedures.

4.0 MOTOR OPERATED VALVES (MOV)

Scope of work will in general include replacement of degraded soft parts, repack and inspect valves for any degradation.

Category (Cat) 1 MOV's require supporting calculations and design output documents to address both mechanical and electrical attributes which are used to establish thrust and torque setting in each valve operator. This design review will encompass both site and industry program commitments to bring Unit 2 MOV's into compliance with TVA and Watts Bar's MOV programs. As a part of the refurbishment, each Unit 2 MOV will be disassembled, cleaned, inspected, hardened grease and soft parts replaced returning the actuator to an OEM acceptable condition. During the refurbishment any changes such as gearing or motor sizing will be incorporated into the actuator in accordance with design output documents. Modifications necessary to address pressure locking and thermal binding will also be incorporated. MOVs will be tested during the startup test program and in accordance with site refurbishment procedures.

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4.0 MOTOR OPERATED VALVES (MOV) (continued)

A review of the lessons learned from Unit 1, vendor recommendations, industry Operating Experience (i.e. GL89-10, Joint Owners Group issues, proven enhancements/fixes, etc.) will be performed to ensure known issues are addressed.

5.0 AIR OPERATED VALVES (AOV)

Scope of work will in general include replacement of degraded soft parts, repack and inspect valve and actuator parts for any degradation. Air Regulators and Valve Positioners will be replaced with a like component or be refurbished. In addition, diagnostic testing (similar to AirCet) will be performed on Category 1 valves as a part of component testing. Other valves will be similarly refurbished and the actuators bench set documented. Positioner controlled valves will receive a post refurbishment in-place calibration. A review of the lessons learned from Unit 1, vendor recommendation, and Operating Experience will be performed to ensure known issues with valves are addressed.

6.0 MAIN STEAM ISOLATION VALVES (MSIV)

The valves will be inspected and restored by a qualified vendor, which will supply parts and labor to refurbish Main Steam Isolation Valves to OEM acceptable conditions. Scope of work will include modifications to eliminate internal valve wear due to flow induced vibration. Modifications will be incorporated to ensure Unit 2 valve performance will meet applicable design basis requirements.

7.0 SNUBBERS

Snubbers will be disassembled, cleaned and inspected, and lubricants and applicable elastomers replaced. Perform required tests on each snubber prior to it being returned to the plant location specified by engineering evaluations.

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8.0 RELAYS

HFA

HFA relays not included in previous inspections will have their coils inspected in accordance with Information Notice IE-92-04 and 82-13. The coils will be evaluated for replacement with Tefzel type coils.

Time Delay Relay (TDR)

Replacement of non-1E Agastat due to Problem Evaluation Reports (PERs) and vendor recommendation relative to reliability issues. Both SQN and WBN have had a high failure rate with this type of TDR. Other Non Safety Related relays were accepted as is unless a generic issue existed with a specific type of relay. If there was an issue they were noted to be replaced.

9.0 INSTRUMENTATION

The EQ program will replace a significant amount of the safety related instruments in plant operating areas, and replacement of major instrumentation systems (Eagle 21, Foxboro process controls) will require others to be replaced. Those items which remain will be inspected, calibrated, and functionally tested.

10.0 LIMIT SWITCHES

Limit switches not replaced by the EQ program will be inspected, soft parts replaced, grease replaced, and functionally tested.

11.0 SOLENOIDS

EQ solenoids will be replaced. The remaining solenoids will be replaced on as needed basis.

Safety related solenoids will be replaced; EQ requirements will also be addressed ensuring qualifications have been maintained. Non Safety related are assumed to use “as-is”.

12.0 TARGET ROCK VALVES

Target Rock valves will be refurbished in accordance with vendor instructions.

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13.0 RELIEF VALVES/SAFETY VALVES

Relief valves will be replaced or refurbished and tested in accordance with standard industry practices and/or vendor and design specifications.

14.0 RADIATION MONITORS

The current Unit 2 radiation monitors have been removed in support of Unit 1 operations. Replacement radiation monitors will be installed under the design process.

Only the samples pumps will be refurbished if necessary.

15.0 MANUAL VALVES

Manual valves at WBN generally consist of valve classifications such as Vent Valves (VTV), Root Valves (RTV), Isolation Valves (ISV), and Drain Valves (DRV), etc.. The valves included in the scope of this procedure will be manually cycled and visually inspected.

Instrument and instrument panel valves will be subject to manipulation and visual observation during instrument calibrations and in service leak tests during the startup test program.

New packing will be installed on the selected valves using the materials specified on the Valve Packing Data Sheet which is included in the planned work package. When flange gaskets are disturbed, new flange gaskets will be installed in manual valves. Manual Diaphragm Valves will require degraded soft parts, (o-rings diaphragm, etc.) to be replaced.

16.0 ELECTRICAL BOARDS

Most electrical boards are in service. Ensure preventative maintenance is up to date.

17.0 HEAT EXCHANGERS

Replace gasketing for access points and manways, inspect for housekeeping.

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18.0 CHECK VALVES

Check valves will be internally inspected for free movement and proper seating per standard industry practices and manufacturer's instructions.

19.0 DAMPERS

Dampers will be refurbished and tested in accordance with standard industry practices and/or vendor and design specifications.

20.0 FANS

Each applicable fan will be inspected and cleaned, consumables replaced (mechanical EQ requirements performed, if applicable) and tested through the component and system test programs. This testing will verify that the refurbished equipment meets its required specifications. Any parts that are found to be unacceptable will be reworked or replaced. Identified missing parts will be replaced with a like component or an approved equivalent.