FENOC
FirstEnergy Nuclear Operating Company

James H. Lash
Site Vice President

724-682-5234
Fax: 724-643-8069

July 10, 2006
L-06-112

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit Nos. 1 and 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Supplement to License Amendment Request Nos. 296 and 169,
Improved Standard Technical Specification Conversion

This letter provides updated pages (Revision 3) to the FirstEnergy Nuclear Operating Company (FENOC) License Amendment Request (LAR) Nos. 296 and 169 to convert the Beaver Valley Power Station (BVPS) Unit Nos. 1 and 2 Technical Specifications to the Improved Technical Specifications (ITS) for Westinghouse Plants, NUREG-1431. The BVPS ITS conversion LAR was originally submitted by FENOC letter L-05-027 dated February 25, 2005.

The purpose of this supplement is to update the BVPS ITS conversion documentation contained in LAR Nos. 296 and 169 (ITS conversion) to incorporate the following:

- Recently submitted BVPS LARs and supplements to LARs,
- Resolution of NRC comments, and
- Other changes identified during the NRC review process.

Attachment 1 of this supplement contains the revised pages organized by individual changes, such that all the affected pages for each change are grouped together by a unique change number. The purpose of Attachment 1 is to facilitate the review of each change by providing all the affected pages for that change in one place. In addition, the revised pages included in Attachment 1 may be used to update the affected pages in the original 10 volume BVPS ITS conversion submittal.

A001

In addition to this BVPS ITS Conversion LAR supplement, it should be noted that at least one more future supplement will be required to incorporate the final approved pages from the pending license amendments for the following BVPS LAR Numbers:

- 302 (Unit 1) and 173 (Unit 2) Extended Power Uprate
- 325 (Unit 1) and 195 (Unit 2) Control Room Habitability
- 202 (Unit 2) Station Battery Charger Upgrades
- 324 (Unit 1) and 196 (Unit 2) Steam Generator Tube Integrity TSTF-449, and
- 183 (Unit 2) S/G Tube Inspection F* Methodology

The information provided with this submittal does not change the evaluations or conclusions of the No Significant Hazards Consideration provided with the ITS conversion LAR. No new regulatory commitments are contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Gregory A. Dunn, Manager, FENOC Fleet Licensing, at (330) 315-7243.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 10, 2006.

Sincerely,

James H. Lash

Attachments:

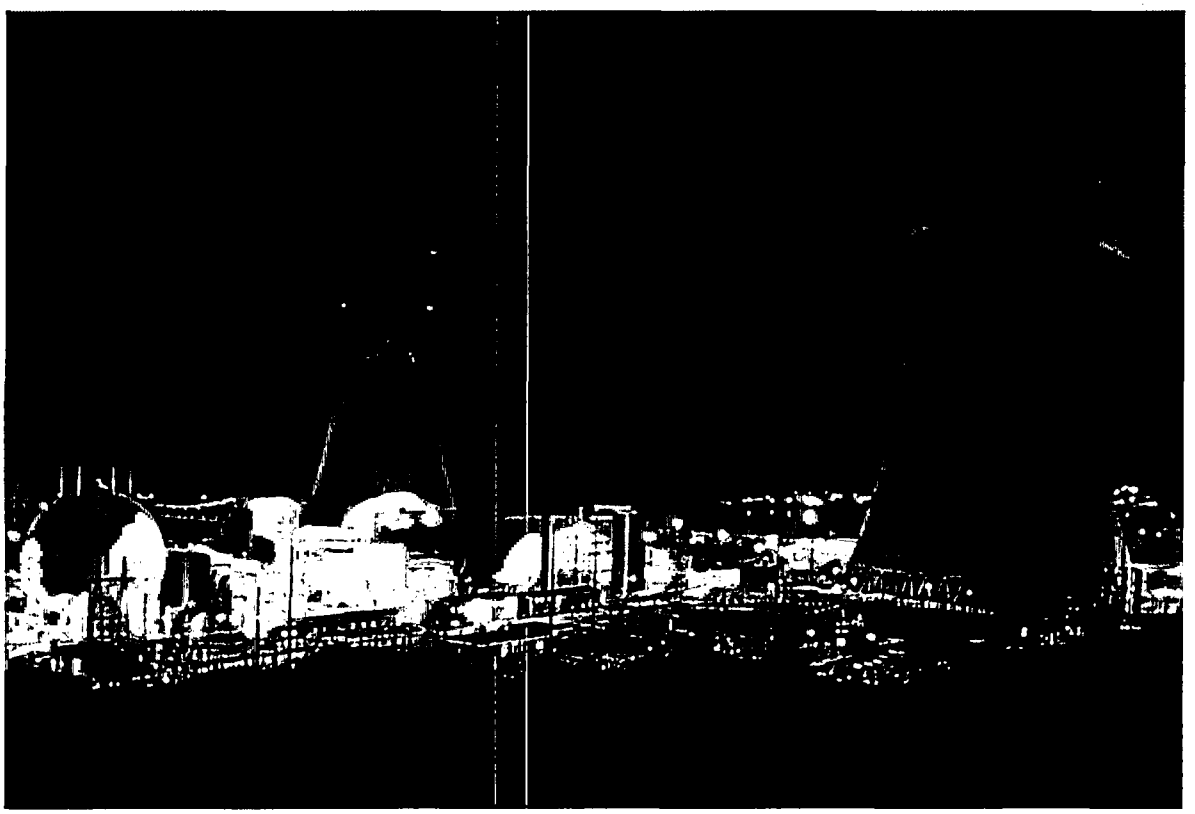
1. BVPS ITS Conversion (LARs 296 and 169) Revision 3 pages sorted by change number.

c: Mr. T. G. Colburn, NRR Senior Project Manager (*) (2 hardcopies)
Mr. P. C. Cataldo, NRC Senior Resident Inspector (*)
Mr. S. J. Collins, NRC Region I Administrator (*)
Mr. D. A. Allard, Director BRP/DEP (*)
Mr. L. E. Ryan (BRP/DEP) (*)

(*) Electronic Copy

BEAVER VALLEY POWER STATION
UNITS 1 & 2

IMPROVED TECHNICAL SPECIFICATION CONVERSION LICENSE AMENDMENT REQUEST



REVISION 3

CHANGES
Affected Pages Organized by Change Number

The Revision 3 Pages In This Volume Are Organized By Individual Change Number With All Affected Pages For Each Change Grouped Together To Facilitate The Review Of Each Change. The Enclosed Revision 3 Pages May Also Be Used To Replace The Affected Pages In The Original BVPS 10 Volume ITS Conversion Submittal.

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BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
Nos. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3 CHANGES

This volume identifies each Revision 3 change by a unique numeric or alpha-numeric designation. The tabbed sections of this volume are labeled with the change numbers. Each tabbed section of this volume includes the following information:

- A description of the Revision 3 change,
- If applicable, the following information is also included; the name of the associated NRC Reviewer(s), the Excel Website database number(s), and the Beyond Scope Issue (BSI) number,
- An index of the revised page number(s) organized by ITS Section(s),
- A copy of each revised page with revision bars to show the associated change, and
- When a change affects multiple ITS sections a separate cover sheet and page number index is included for each ITS section.

Depending on which pages are affected by each change, the pages for each change are presented in the following order; ITS markups and associated Justifications for Deviation (JFDs), ITS Bases Markups and associated JFDs, Current Technical Specification (CTS) markups and associated Discussion of Change (DOC).

Each affected page is identified as a Revision 3 page. In addition, each affected page is identified with the associated change number(s) for that page. The Revision 3 changes made to each page are further identified by revision bars.

The page numbers referenced in the Revision 3 cover page for each change are the ITS section specific sequential numbers added to the bottom right hand corner of each page. In most cases, the BVPS ITS Conversion documentation can be updated to Revision 3 by simply replacing the existing page with the corresponding Revision 3 page. However, in order to add pages or avoid excessive repagination, one or more alpha-numeric numbered pages (e.g., 129A) were created for some changes. When updating the original BVPS submittal document with Revision 3 pages, the alpha-numeric numbered pages are inserted in alpha order after the page with the same number (e.g., page 129B follows page 129A, which in turn follows page 129).

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 1

Database # 200509151411
NRC Reviewer: K. Wood
BSI-12 Withdrawal

Affected BVPS ITS

3.4.18, Isolated Loop Startup

Description

BVPS originally proposed changes to the Isolated RCS Loop Startup Technical Specification requirements that were different from the Improved Standard Technical Specifications (ISTS) and different from the BVPS Current Technical Specifications (CTS). These changes were identified as Beyond Scope Issue (BSI) number 12. This Revision 3 change reflects the withdrawal of the BSI-12 changes. As such, this Revision 3 change results in the ITS 3.4.18 requirements for isolated RCS loop startup being made consistent with the BVPS CTS requirements for isolated loop startup. The BVPS CTS requirements are reformatted into the ISTS presentation. No technical changes are made to the CTS requirements to adopt the ISTS format. Thus, this Revision 3 change maintains the current BVPS NRC approved licensing bases with regard to the requirements for isolated loop startup.

Affected Pages:

The following Table(s) list the affected pages by type (i.e., ITS markup, CTS markup, etc.). In order to facilitate review by ITS section, a separate table is provided for each ITS section affected by the change. **The page numbers listed are the ITS section specific consecutive numbers found in the lower right corner of each page.**

Note: Because the affected page(s) for each change were extracted from a complete ITS section electronic file, the electronic hyperlinks (created in the complete ITS section file) do not work in the collection of affected pages that follow this cover page.

(continued)

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

Change 1 (continued)

ITS SECTION 3.4 (REACTOR COOLANT SYSTEM) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 50, 51, 52**
ITS JFDS	**PAGES: 86, 87, 88**
ITS BASES MARKUPS	**PAGES: 189, 190, 191, 192, 193**
ITS BASES JFDS	**PAGES: 218**
CTS MARKUPS	**PAGES: 239, 240, 241**
CTS DOCS	**PAGES: 334, 335, 336, 337, 338, 339, 340**

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.18 RCS Isolated Loop Startup

ISTS 3.4.18 REPLACED WITH CORRESPONDING CTS REQUIREMENTS IN ISTS FORMAT.
LINK TO REFORMATTED CTS

LCO 3.4.18 Each RCS isolated loop shall remain isolated with:

a. The hot and cold leg isolation valves closed if boron concentration of the isolated loop is less than boron concentration required to meet the SDM of LCO 3.1.1 or boron concentration of LCO 3.9.1 and

b. The cold leg isolation valve closed if the cold leg temperature of the isolated loop is > [20]°F below the highest cold leg temperature of the operating loops.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Isolated loop hot or cold leg isolation valve open with LCO requirements not met.	A.1 ---------- **- NOTE -** Only required if boron concentration requirement not met. ---------- Close hot and cold leg isolation valves.	Immediately
	OR	
	A.2 ---------- **- NOTE -** Only required if temperature requirement not met. ---------- Close cold leg isolation valve.	Immediately

ISTS 3.4.18 REPLACED WITH CORRESPONDING CTS REQUIREMENTS IN ISTS FORMAT.
LINK TO REFORMATTED CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	
SR 3.4.18.1	Verify cold leg temperature of isolated loop is ≤ [20]°F below the highest cold leg temperature of the operating loops.	Within 30 minutes prior to opening the cold leg isolation valve in isolated loop
SR 3.4.18.2	Verify boron concentration of isolated loop is greater than or equal to the boron concentration required to meet the SDM of LCO 3.1.1 or boron concentration of LCO 3.9.1.	Within 2 hours prior to opening the hot or cold leg isolation valve in isolated loop

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.18 RCS Isolated Loop Startup

LCO 3.4.18 Each RCS isolated loop shall remain isolated with the hot and cold leg isolation valves closed:

a. If the boron concentration in the isolated loop is < required to satisfy the applicable requirements of LCO 3.1.1, SHUTDOWN MARGIN (in MODE 5) and LCO 3.9.1, Boron Concentration, (in MODE 6), and

b. Until the isolated portion of the loop has been drained and refilled from the refueling water storage tank or RCS.

APPLICABILITY: MODES 5 and 6 when an RCS loop has been isolated > 4 hours or drained.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO requirement(s) not met.	A.1 Isolate affected RCS loop(s) by closing the hot and cold leg isolation valves.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.18.1	Verify the isolated loop has been drained and refilled with water from the refueling water storage tank or RCS.	Prior to opening the isolated loop hot or cold leg isolation valve
SR 3.4.18.2	Verify the isolated loop boron concentration is ≥ the required value to satisfy the applicable requirements of LCO 3.1.1, SHUTDOWN MARGIN (in MODE 5) and LCO 3.9.1, Boron Concentration, (in MODE 6).	Within 2 hours prior to opening the isolated loop hot or cold leg isolation valve
SR 3.4.18.3	Verify the isolated loop hot or cold leg isolation valve is opened.	Within 4 hours following completion of refilling the isolated loop.

ITS 3.4.18 RCS Isolated Loop Startup

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.4.18, Isolated Loop Startup, requirements are replaced in their entirety by the BVPS CTS 3.4.1.5, Isolated Loop Startup, requirements. The previously NRC approved CTS requirements are retained but reformatted into the ISTS format. The reformat includes changing the technical specification requirements referenced by CTS 3.4.1.5 to the corresponding ITS names and numbers.

   The CTS applicability is clarified by the addition of Modes 5 and 6 consistent with the ISTS Applicability presentation (i.e., the statement of specific Modes). In addition, the clarification of the Mode requirements for ITS 3.4.18 is consistent with the applicability of ITS 3.4.17, Loop Isolation Valves, which specifies that all RCS isolation valves be secured (power to the valve operator removed) open in Modes 1-4. Therefore, RCS loop isolation is not permitted in Modes 1-4. If any RCS isolation valve is closed in Modes 1-4, ITS 3.4.17 requires that the plant be placed in Mode 5 where the affected RCS loop can be unisolated in accordance with ITS 3.4.18. As such, ITS 3.4.18 is only applicable in Modes 5 and 6.

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B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.18 RCS Isolated Loop Startup

BASES

3

tasks such as

or inspections.

BACKGROUND The RCS may be operated with loops isolated in MODES 5 and 6 in order to perform maintenance. While operating with a loop isolated, there is potential for inadvertently opening the isolation valves in the isolated loop. In this event, the coolant in the isolated loop would suddenly begin to mix with the coolant in the operating loops. This situation has the potential of causing a positive reactivity addition with a corresponding reduction of SDM if ~~either~~:

1

b. The isolated portion of the RCS loop has not been drained and refilled from the refueling water storage tank (RWST) or RCS.

when in MODE 6

a. ~~The temperature in the isolated loop is lower than the temperature in the operating loops (cold water incident) or~~

a.

when in MODE 5

~~b.~~ The boron concentration in the isolated loop is lower than the boron concentration required to meet the SDM of LCO 3.1.1 or boron concentration of LCO 3.9.1 (boron dilution incident).

the

and

U

required to maintain SDM

As discussed in the FSAR (Ref. 1), the startup of an isolated loop is done in a controlled manner that virtually eliminates any ~~sudden~~ reactivity addition from cold water or boron dilution because:

≥

undesirable

below the concentration necessary to maintain the required SDM.

a. This LCO and plant operating procedures require that the boron concentration in the isolated loop be maintained ~~higher than~~ the boron concentration ~~of the operating loops~~, thus eliminating the potential for introducing coolant from the isolated loop that could dilute the boron concentration in the operating loops;

b. In addition, this LCO and plant operating procedures require that the isolated portion of the RCS loop be drained and refilled with water from the RWST or RCS. These requirements ensure the loop is filled with water that has a boron concentration and a temperature that are within the limits assumed in the applicable SDM calculation. In addition, the refilling of the loop ensures that the borated water in the loop is well mixed prior to unisolating the loop.

~~b. The cold leg loop isolation valve cannot be opened unless the temperatures of both the hot leg and cold leg of the isolated loop are within 20°F of the operating loops. Compliance with the temperature requirement is ensured by operating procedures. and automatic interlocks, and~~

~~c. Other automatic interlocks prevent opening the hot leg loop isolation valve unless the cold leg loop isolation valve is fully closed. All of the interlocks are part of the Reactor Protection System.~~

2

BASES

controls required by this LCO (2)

APPLICABLE SAFETY ANALYSES (1)

loop isolation valves until the isolated loop is drained and refilled from the RWST or the RCS. In addition, the boron concentration of the isolated loop is verified to be within the limit for the required SDM.

During startup of an isolated loop, the ~~cold leg loop isolation valve interlocks and operating procedures~~ prevent opening the ~~valve until the isolated loop and operating loop boron concentrations and temperatures are equalized~~. This ensures that any undesirable reactivity effect from the isolated loop does not occur.

The safety analyses assume a minimum SDM as an initial condition for Design Basis Accidents. Violation of this LCO could result in the SDM being reduced in the operating loops to less than that assumed in the safety analyses.

. ,

The boron concentration of an isolated loop may affect SDM ~~and therefore~~ RCS isolated loop startup satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

may be | tasks such as | or inspections

LCO (3)

affected loop is drained and refilled from the RWST or RCS and the

Loop isolation valves ~~are~~ used for performing maintenance when the plant is in MODE 5 or 6. This LCO ensures that the loop isolation valves remain closed until the ~~differentials of temperature and~~ boron concentration ~~between the operating loops and~~ the isolated loops ~~are~~ within acceptable limits. (1)

to maintain the required SDM. | of | is verified to be

APPLICABILITY (1) (4)

when an RCS loop has been isolated for > 4 hours or drained this LCO becomes applicable to recover the affected loop.

In MODES 5 and 6 ~~the SDM of the operating loops~~ is large enough to permit operation with isolated loops. Controlled startup of isolated loops is possible without significant risk of inadvertent criticality. This LCO is applicable under these conditions.

In MODES 5 and 6, the required SDM

ACTIONS

In MODES 1, 2, 3, and 4 LCO 3.4.17, RCS Loop Isolation Valves, requires that all loop isolation valves be open with power removed from the valve operator. In MODES 5 and 6 if a loop is isolated for ≤ 4 hours and not drained the condition of the isolated loop has not changed significantly. Therefore, under these conditions, LCO 3.4.18 is not applicable.

A.1 ~~and A.2~~

s

Required Action A.1 ~~and Required Action A.2~~ assume that the prerequisites of the LCO are not met and a loop isolation valve has been inadvertently opened. Therefore, the Actions require immediate closure of isolation valves to preclude a boron dilution event or a cold water event. ~~However, each Required Action is preceded by a Note that states that Action is required only when a specific concentration or temperature requirement is not met.~~ (1)

SURVEILLANCE REQUIREMENTS (1)

SR 3.4.18.1

INSERT 1

This Surveillance is performed to ensure that the temperature differential between the isolated loop and the operating loops is ≤ [20]°F. Performing the Surveillance 30 minutes prior to opening the cold leg isolation valve in the isolated loop provides reasonable assurance, based on engineering judgment, that the temperature differential will stay within

Rev. 3, Change 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~limits until the cold leg isolation valve is opened. This Frequency has been shown to be acceptable through operating experience.~~

SR 3.4.18.2

this

1

To ensure that the boron concentration of the isolated loop is greater than or equal to the boron concentration required to meet the SDM of LCO 3.1.1 or boron concentration of LCO 3.9.1, ~~a~~ Surveillance is performed 2 hours prior to opening either the hot or cold leg isolation valve. Performing the Surveillance 2 hours prior to opening either the hot or cold leg isolation valve provides reasonable assurance the boron concentration ~~difference~~ will stay within acceptable limits until the loop is unisolated. This Frequency has been shown to be acceptable through operating experience.

INSERT 2

REFERENCES 1. ~~FSAR, Section [15.2.6].~~

UFSAR Section 14.1.6 (Unit 1) and Section 15.4.4 (Unit 2).

Rev. 3, Change 1

ITS 3.4.18 BASES INSERTS

INSERT 1

This surveillance verifies the isolated portion of the affected RCS loop is drained and refilled with water from the RWST or RCS. This verification provides assurance that the loop is filled with water that has a boron concentration and a temperature that are within the limits assumed in the applicable SDM calculation. The frequency of prior to opening the isolated loop hot or cold leg isolation valve provides additional assurance an isolated loop is returned to service in accordance with the provisions of LCO 3.4.18.

INSERT 2

SR 3.4.18.3

This surveillance verifies the isolated loop hot or cold leg isolation valve is opened within 4 hours following the completion of the isolated loop refill. This verification confirms that the loop being returned to service has been recently refilled in accordance with SR 3.4.18.1. The Frequency of within 4 hours after completion of the refill provides assurance that there is no significant change in boron concentration or temperature of the water in the loop since refill and that the contents of the loop remain well mixed when the loop is unisolated.

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ITS 3.4.18 RCS Isolated Loop Startup Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases is revised to reflect changes made to the corresponding LCO 3.4.18 to maintain the BVPS CTS requirements for isolated loop startup. BVPS is maintaining the current NRC approved technical specification requirements for isolated startup. Changes to the ISTS 3.4.18 Bases are made as necessary to conform to the BVPS CTS licensing basis for isolated loop startup.

2. The ISTS bases text is revised to eliminate the RCS loop isolation valve interlock discussions from the Background and Safety Analysis description. Although BVPS has valve interlocks which prevent opening of the RCS hot and cold leg isolation valves and the start of a RCP, these interlocks are not relied on in the technical specifications for the startup of an isolated loop. The CTS bases only credits administrative controls to ensure the controlled startup of an isolated loop. In addition, as described in the BVPS UFSAR Section 14.1.6 (Unit 1 and UFSAR Section 15.4.4 (Unit 2) the interlock for opening a cold leg loop stop valve may be procedurally bypassed. The current (CTS) and proposed (ITS) controls required by the TS for isolated loop startup provide sufficient assurance that the startup of an isolated loop will be accomplished in a controlled manner without introducing unacceptable changes in boron concentration or temperature in the RCS. The operability or availability of these interlocks is not part of the CTS or proposed ITS.

3. The bases description regarding how the RCS isolation valves may be used in Modes 5 and 6 is revised to be less specific. The bases should not limit the use of isolation valves in these Modes to maintenance activity only.

4. The ISTS Applicability discussion is revised to reflect the fact that all RCS loops may be isolated in Modes 5 and 6. RHR may continue to be used for decay heat removal with all RCS loops isolated and the availability of the RCS loops does not affect the required SDM. Therefore, the ISTS reference to the "SDM of the operating loops" is revised to delete "of the operating loops".

Rev. 3, Change 1

REACTOR COOLANT SYSTEM

ISOLATED LOOP STARTUP

ITS 3.4.18

LCO 3.4.18

A1

LIMITING CONDITION FOR OPERATION

~~3.4.1.5~~ Each RCS isolated loop shall remain isolated with:

b → ~~a~~. The hot and cold leg isolation valve closed until the isolated portion of the loop has been drained and refilled from the refueling water storage tank or Reactor Coolant System~~, and~~ .

a → ~~b~~. The hot and cold leg isolation valves closed if the boron concentration in the isolated loop is less than the minimum required to satisfy the applicable requirements of Specification 3.1.1~~.2~~ for MODE 5 or Specification 3.9.1 for MODE 6~~.~~ , and

APPLICABILITY: Whenever an RCS loop has been isolated greater than 4 hours or drained~~(1)~~.

MODES 5 and 6

A2

ACTION:

LCO requirement(s) not met

~~With the requirements of the above specification not satisfied~~, immediately close the hot and cold leg isolation valves.

SR 3.4.18.1

SURVEILLANCE REQUIREMENTS

~~4.4.1.5.1~~ Verify that the isolated loop has been drained and refilled with water from the refueling water storage tank or Reactor Coolant System prior to opening the hot or cold leg isolation valve in the isolated loop.

~~4.4.1.5.2~~ Verify that the isolated loop boron concentration is greater than or equal to the minimum required to satisfy the applicable requirements of Specification 3.1.1~~.2~~ for MODE 5 or Specification 3.9.1 for MODE 6 within 2 hours prior to opening the hot or cold leg isolation valve in the isolated loop.

~~4.4.1.5.3~~ Verify that the hot or cold leg isolation valve in the isolated loop is opened within 4 hours following completion of refilling the isolated loop.

SR 3.4.18.2

SR 3.4.18.3

~~(1) With fuel in the vessel.~~

A2

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CTS 3.4.1.5 Isolated Loop Startup
ITS 3.4.18 RCS Isolated Loop Startup
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None.

More Restrictive Changes (M)

None.

Removed Detail Changes (LA)

None.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "*Standard Technical Specifications-Westinghouse Plants*" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.4.1.5 Applicability states " Whenever an RCS loop has been isolated greater than 4 hours or drained". The CTS Applicability is modified by footnote 1. CTS footnote 1 states "With fuel in the vessel." The corresponding ITS 3.4.18 Applicability states "MODES 5 and 6 when and RCS loop has been isolated > 4

hours or drained". The ITS Applicability does not reference a footnote. This changes the CTS Applicability by adding "MODES 5 and 6" and deleting the footnote stating "With fuel in the vessel."

The proposed change adding MODES 5 and 6 is acceptable because the addition of these MODES is a clarification consistent with the presentation of Applicability in the ISTS (i.e., the statement of specific MODES in the Applicability). In addition, the clarification of the MODE requirements for ITS 3.4.18 is consistent with the applicability of ITS 3.4.17, Loop Isolation Valves, which specifies the Applicability for the RCS isolation valves in MODES 1-4 and requires that all RCS isolation valves be secured (power removed from the valve operator) open in MODES 1-4. Therefore, RCS loop isolation is not permitted in MODES 1-4. If any RCS loop isolation valve is closed in MODES 1-4, ITS 3.4.17 requires that the plant be placed in MODE 5 where the affected RCS loop can be returned to service in accordance with ITS 3.4.18. As such, ITS 3.4.18 is only applicable in MODES 5 and 6.

The proposed change deleting the CTS footnote "With fuel in the vessel" is acceptable because of the addition of "MODES 5 and 6" to the CTS Applicability. In the ISTS, the definition of operating MODE contains the provision that fuel is in the vessel. Therefore, the addition of MODES 5 and 6 to the CTS applicability eliminates the need for the separate CTS footnote "With fuel in the vessel.". This type of Applicability footnote is not used in the ISTS and was only used in the CTS where necessary because the CTS definition of MODE did not include the provision "with fuel in the vessel".

As such, the proposed changes do not result in a technical change to the CTS and are necessary to conform to the ITS Applicability presentation and MODE definition. Therefore, the proposed changes are designated administrative.

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BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 2

Incorporation of draft pages for License Amendment Request (LAR) Nos.: 324 (Unit 1)
196 (Unit 2)
183 (Unit 2)

Affected BVPS ITS

Section 1.0, Definitions
Section 3.4, RCS,
Section 5.0, Administrative Controls

Description

LARs 324 (Unit 1) and 196 (Unit 2) were submitted by FENOC Letter L-05-144 dated 11/7/05 and supplemented by FENOC Letter L-06-88 dated 6/1/06. These LARs Implement *approved* TSTF-449 in the CTS and are scheduled to be approved prior to the ITS conversion LAR. TSTF 449 revises the definition of Leakage in ITS Section 1.0, introduces a new ITS LCO (3.4.20) in Section 3.4 titled Steam Generator Tube Integrity, revises ITS 3.4.13, Operational Leakage, revises Specification 5.5.5, SG Program, and Revises 5.6.6, SG Tube Inspection Report.

Unit 2 LAR No. 183 was submitted by FENOC Letter L-05-061 dated 4/11/05 and supplemented by FENOC Letter L-06-013 dated 1/27/06. This LAR Implements the Westinghouse F* Tube plugging criteria for the Unit 2 SG tubes with degradation in the tube sheet roll expansion region (in accordance with WCAP-16385-NP, Rev. 1). This LAR is scheduled to be approved prior to the ITS conversion. The proposed Westinghouse F* requirements are incorporated into the Unit 2 SG Program and reporting requirements in the Administrative Controls section of the Technical Specifications along with the changes from LAR No 196 described above.

As these LARs are not yet approved, draft pages from each LAR have been incorporated into the CTS markups used in the ITS conversion. Each draft CTS page used in the ITS conversion is clearly marked as such on the top of the page along with the associated LAR number.

Affected Pages:

The following Table(s) list the affected pages by type (i.e., ITS markup, CTS markup, etc.). In order to facilitate review by ITS section, a separate table is provided for each ITS section affected by the change. **The page numbers listed are the ITS section specific consecutive numbers found in the lower right corner of each page.**

Note: Because the affected page(s) for each change were extracted from a complete ITS section electronic file, the electronic hyperlinks (created in the complete ITS section file) do not work in the collection of affected pages that follow this cover page.

(continued)

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
Nos. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

Change 2 (continued)

ITS SECTION 1.0 (USE AND APPLICATION) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 6**
ITS JFDS	None
ITS BASES MARKUPS	None
ITS BASES JFDS	None
CTS MARKUPS	**PAGES: 41**
CTS DOCS	None

ITS SECTION 3.4 (REACTOR COOLANT SYSTEM) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 4, 34, 35, 53A, 53B**
ITS JFDS	**PAGES: 79, 89A**
ITS BASES MARKUPS	**PAGES: 108, 113, 118, 124, 163, 164, 165, 166, 167, 167A, 196A – 196H.**
ITS BASES JFDS	**PAGES: 220A**
CTS MARKUPS	**PAGES: 248 – 259, 266, 267**
CTS DOCS	**PAGES: 351, 352, 353, 359, 360, 361**

ITS SECTION 5.0 (ADMINISTRATIVE CONTROLS) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 14, 28, 33 – 46, 52, 53**
ITS JFDS	**PAGES: 60, 62**
ITS BASES MARKUPS	**PAGES:** None
ITS BASES JFDS	**PAGES:** None
CTS MARKUPS	**PAGES: 81, 81A, 82, 87, 87A – 87F, 91 – 109**
CTS DOCS	**PAGES: 138**

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 2

AFFECTED PAGES FOR ITS SECTION 1.0 (USE AND APPLICATION)

ITS SECTION 1.0 (USE AND APPLICATION) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 6**
ITS JFDS	None
ITS BASES MARKUPS	None
ITS BASES JFDS	None
CTS MARKUPS	**PAGES: 41**
CTS DOCS	None

Rev. 3, Change 2

1.1 Definitions

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of *sequential, overlapping, or total steps so that the entire* response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
LEAKAGE	LEAKAGE shall be: a. Identified LEAKAGE 1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank, 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE, or 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator ~~(SG)~~ to the Secondary System; (primary to secondary LEAKAGE) b. Unidentified LEAKAGE All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE, and c. Pressure Boundary LEAKAGE LEAKAGE (except ~~SG~~ LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

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primary to secondary

CORE ALTERATION A.1

~~1.12~~ CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

SHUTDOWN MARGIN (SDM) subcritical :a. control (RCCAs)

~~1.13~~ SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is or would be subcritical from its present condition assuming all ~~full length~~ rod cluster assemblies ~~(shutdown and control)~~ are fully inserted except for the single ~~rod cluster assembly~~ of highest reactivity worth which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation. RCCA L.2

LEAKAGE

~~1.14~~ LEAKAGE shall be: With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM, and A.9 b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level. A.10

a. Identified LEAKAGE

(RCP) 1. LEAKAGE, ~~such as that~~ from pump seals or valve packing (except reactor coolant pump seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank~~;~~ ,

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE, or

(RCS) 3. Reactor Coolant System LEAKAGE through a steam generator to the secondary system (primary to secondary LEAKAGE)~~.~~ ;

b. Unidentified LEAKAGE

RCP

~~Unidentified LEAKAGE shall be~~ All LEAKAGE (except ~~reactor coolant pump~~ seal water injection or leakoff) that is not identified LEAKAGE~~.~~ , and

c. Pressure Boundary LEAKAGE

RCS ~~Pressure Boundary LEAKAGE shall be~~ LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in a ~~Reactor Coolant System~~ component body, pipe wall or vessel wall. ,

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
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REVISION 3

CHANGE 2

AFFECTED PAGES FOR ITS SECTION 3.4 (REACTOR COOLANT SYSTEM)

ITS SECTION 3.4 (REACTOR COOLANT SYSTEM) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 4, 34, 35, 53A, 53B**
ITS JFDS	**PAGES: 79, 89A**
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ITS BASES JFDS	**PAGES: 220A**
CTS MARKUPS	**PAGES: 248 – 259, 266, 267**
CTS DOCS	**PAGES: 351, 352, 353, 359, 360, 361**

SECTION 3.4 Reactor Coolant System

ISTS	BVPS ITS	CTS
3.4.19 RCS Loops - Test Exceptions	3.4.19 RCS Loops - Test Exceptions	3.10.5 No Flow Test (Unit 1) [2] 3.10.4 RCS Loops (Unit 2) [2]
3.4.20 SG Tube Integrity	3.4.20 SG Tube Integrity	3.4.5 SG Tube Integrity

TABLE NOTES:

1. The ISTS does not contain a separate LCO requirement for Steam Generators. The Steam Generator Tube Inspection requirements are moved into the Administrative Controls Program Section of the TS. The inspection requirements are not changed only moved into a separate TS program. ISTS 3.4.13, RCS Operational Leakage, contains a surveillance requirement (SR 3.4.13.2) that requires the Steam Generator tube integrity to be verified in accordance with the Steam Generator Tube Surveillance Program. ISTS 3.4.13 is applicable in Modes 1-4 (the same as the CTS Steam Generator TS).

2. The ISTS does not have a section that corresponds to CTS Section 3.10 "Special Test Exceptions". All test exceptions that are retained in the ISTS are moved into the TS section for which they are applicable. Therefore, all Test Exceptions from CTS Section 3.10 that apply to Specifications in Section 3.4 are addressed in Section 3.4.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE,

b. 1 gpm unidentified LEAKAGE,

c. 10 gpm identified LEAKAGE,

d. ~~1 gpm total primary to secondary LEAKAGE through all steam generators (SGs),~~ and

e. ~~[500]~~ gallons per day primary to secondary LEAKAGE through any one ~~SG~~.

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1

150

steam generator (SG)

APPLICABILITY: MODES 1, 2, 3, and 4.

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operational

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

or primary to secondary LEAKAGE.

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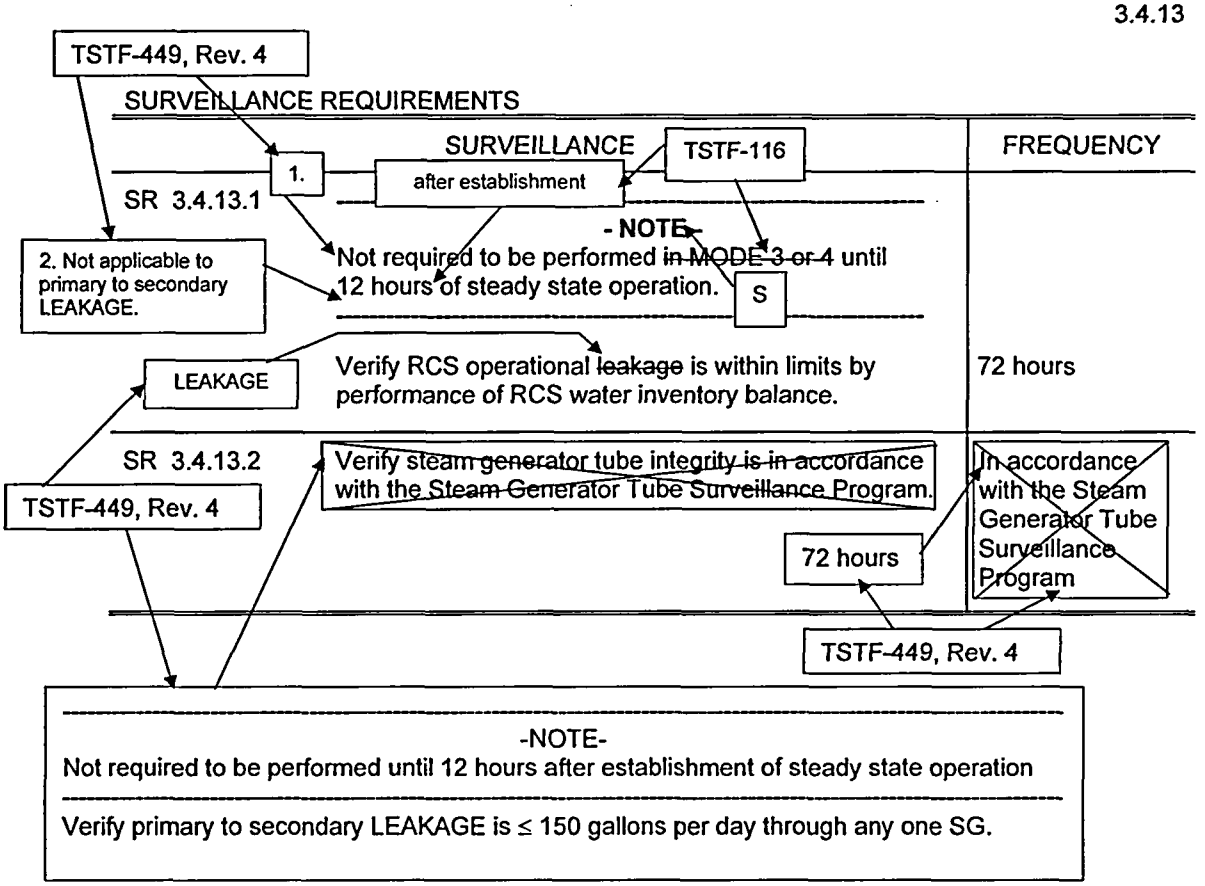
OR
Primary to secondary LEAKAGE not within limit.


TSTF-449, Rev. 4
SURVEILLANCE REQUIREMENTS
SURVEILLANCE
FREQUENCY
1.
after establishment
TSTF-116
SR 3.4.13.1
- NOTE
Not required to be performed in MODE 3 or 4 until 12 hours of steady state operation.
S
2. Not applicable to primary to secondary LEAKAGE.
LEAKAGE
Verify RCS operational leakage is within limits by performance of RCS water inventory balance.
72 hours
SR 3.4.13.2
Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.
In accordance with the Steam Generator Tube Surveillance Program
TSTF-449, Rev. 4
72 hours
TSTF-449, Rev. 4
-NOTE-
Not required to be performed until 12 hours after establishment of steady state operation
Verify primary to secondary LEAKAGE is ≤ 150 gallons per day through any one SG.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.20 Steam Generator (SG) Tube Integrity

LCO 3.4.20 SG tube integrity shall be maintained.

AND (1) 1

All SG tubes satisfying the tube repair criteria shall be plugged [or repaired] in accordance with the Steam Generator Program.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

NOTE

Separate Condition entry is allowed for each SG tube.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more SG tubes satisfying the tube repair criteria and not plugged [or repaired] in accordance with the Steam Generator Program. (1) 1	A.1	Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection.	7 days
	AND		
	A.2	Plug [or repair] the affected tube(s) in accordance with the Steam Generator Program.	Prior to entering MODE 4 following the next refueling outage or SG tube inspection
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
OR	B.2	Be in MODE 5.	36 hours 1
SG tube integrity not maintained.			

(1) SG Tube repair is only applicable to Unit 2

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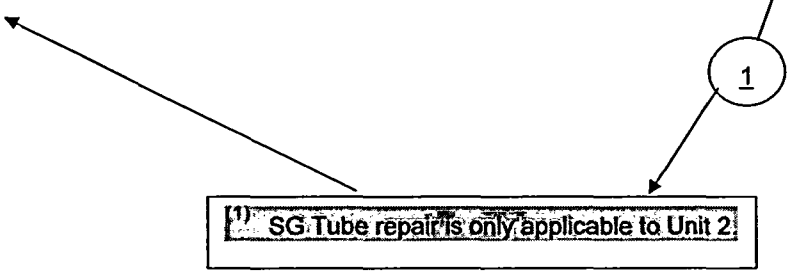
SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.20.1	Verify SG tube integrity in accordance with the Steam Generator Program.	In accordance with the Steam Generator Program
SR 3.4.20.2	Verify that each inspected SG tube that satisfies the tube repair criteria is plugged [or repaired] in accordance with the Steam Generator Program. (1)	Prior to entering MODE 4 following a SG tube inspection



(1) SG Tube repair is only applicable to Unit 2.

ITS 3.4.13 RCS Operational Leakage

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.4.13 steam generator leakage requirements are revised consistent with the BVPS CTS requirements. The Unit 2 BVPS specific requirements for steam generator leakage are consistent with the guidance of NRC Generic Letter 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking." The NRC has specifically approved the Unit 2 BVPS CTS leakage limits in Amendment 101 issued 8/18/99. The BVPS Unit 1 Leakage Limits were recently reviewed by the NRC in association with the approval of the Unit 1 Replacement Steam Generator Amendment 273 issued 2/9/06. In addition, these changes are consistent with TSTF-449, Rev. 4.

ITS 3.4.20 SG Tube Integrity

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.4.20 is revised by the addition of a footnote. The BVPS specific footnote (1) modifies the references to tube repair in the ISTS 3.4.20 LCO, Actions, and Surveillance. The BVPS footnote (1) states that "SG tube repair is only applicable to Unit 2." The addition of this BVPS specific footnote is necessary to clarify a difference between BVPS Unit 1 and Unit 2. Currently only Unit 2 has NRC approved provisions for SG tube repair in the technical specifications. The newer Unit 1 SGs do not have technical specification provisions for tube repair as yet. The proposed note clarifies that the repair provisions referenced in ISTS 3.4.20 are only applicable to Unit 2. The NRC approved provisions for tube repair are provided in the Unit 2 Steam Generator Program in Section 5.0 of the BVPS ITS.

Rev. 3, Change 2

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~safety analyses are based on initial conditions at high core power or zero power. The accident analyses that are most important to RCP operation are the [four] pump coastdown, single pump locked rotor, single pump (broken shaft or coastdown), and rod withdrawal events (Ref. 1).~~

~~Steady state DNB analysis has been performed for the [four] RCS loop operation. For [four] RCS loop operation, the steady state DNB analysis, which generates the pressure and temperature Safety Limit (SL) (i.e., the departure from nucleate boiling ratio (DNBR) limit) assumes a maximum power level of 109% RTP. This is the design overpower condition for [four] RCS loop operation. The value for the accident analysis setpoint of the nuclear overpower (high flux) trip is 107% and is based on an analysis assumption that bounds possible instrumentation errors. The DNBR limit defines a locus of pressure and temperature points that result in a minimum DNBR greater than or equal to the critical heat flux correlation limit.~~

~~The plant is designed to operate with all RCS loops in operation to maintain DNBR above the SL, during all normal operations and anticipated transients. By ensuring heat transfer in the nucleate boiling region, adequate heat transfer is provided between the fuel cladding and the reactor coolant.~~

RCS Loops - MODES 1 and 2 satisfy Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

three

The purpose of this LCO is to require an adequate forced flow rate for core heat removal. Flow is represented by the number of RCPs in operation for removal of heat by the SGs. To meet safety analysis acceptance criteria for DNB, ~~[four]~~ pumps are required at rated power.

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An OPERABLE RCS loop consists of an OPERABLE RCP in operation providing forced flow for heat transport and an OPERABLE SG ~~in accordance with the Steam Generator Tube Surveillance Program~~.

APPLICABILITY

In MODES 1 and 2, the reactor is critical and thus has the potential to produce maximum THERMAL POWER. Thus, to ensure that the assumptions of the accident analyses remain valid, all RCS loops are required to be OPERABLE and in operation in these MODES to prevent DNB and core damage.

Rev. 3 Change 2

BASES

LCO (continued)

shown that boron stratification is not a problem during this short period with no forced flow.

Utilization of the Note is permitted provided the following conditions are met, along with any other conditions imposed by initial startup test procedures:

a. No operations are permitted that would dilute the RCS boron concentration with coolant at boron concentrations less than required to assure the SDM of LCO 3.1.1, thereby maintaining the margin to criticality. Boron reduction with coolant at boron concentrations less than required to assure SDM is maintained is prohibited because a uniform concentration distribution throughout the RCS cannot be ensured when in natural circulation and

b. Core outlet temperature is maintained at least 10°F below saturation temperature, so that no vapor bubble may form and possibly cause a natural circulation flow obstruction.

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An OPERABLE RCS loop consists of one OPERABLE RCP and one OPERABLE SG ~~in accordance with the Steam Generator Tube Surveillance Program~~, which has the minimum water level specified in SR 3.4.5.2. An RCP is OPERABLE if it is capable of being powered and is able to provide forced flow if required.

APPLICABILITY

In MODE 3, this LCO ensures forced circulation of the reactor coolant to remove decay heat from the core and to provide proper boron mixing. The most stringent condition of the LCO, that is, two RCS loops OPERABLE and two RCS loops in operation, applies to MODE 3 with the Rod Control System capable of rod withdrawal. The least stringent condition, that is, two RCS loops OPERABLE and one RCS loop in operation, applies to MODE 3 with the Rod Control System not capable of rod withdrawal.

5

LCO 3.1.10, "RCS Boron Limitations < 500 °F,"

Operation in other MODES is covered by:

LCO 3.4.4, "RCS Loops - MODES 1 and 2,"
LCO 3.4.6, "RCS Loops - MODE 4,"
LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled,"
LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled,"
LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level" (MODE 6), and

3

4

Rev. 3, Change 2

BASES

LCO (continued)

4

the tests performed during the startup testing program is the validation of rod drop times during cold conditions, both with and without flow. The no flow test may be performed in MODE 3, 4, or 5 and requires that the pumps be stopped for a short period of time. The Note permits the stopping of the pumps in order to perform this test and validate the assumed analysis values. If changes are made to the RCS that would cause a change to the flow characteristics of the RCS, the input values must be revalidated by conducting the test again. The 1 hour time period is adequate to perform the test, and operating experience has shown that boron stratification is not a problem during this short period with no forced flow.

pump swaps and most tests that may be necessary in MODE 4

Utilization of Note 1 is permitted provided the following conditions are met along with any other conditions imposed by initial startup test procedures:

the

a. No operations are permitted that would dilute the RCS boron concentration with coolant with boron concentrations less than required to meet SDM of LCO 3.1.1, therefore maintaining the margin to criticality. Boron reduction with coolant at boron concentrations less than required to assure SDM is maintained is prohibited because a uniform concentration distribution throughout the RCS cannot be ensured when in natural circulation and

2

b. Core outlet temperature is maintained at least 10°F below saturation temperature, so that no vapor bubble may form and possibly cause a natural circulation flow obstruction.

<

non-isolated

the enable

the first

Note 2 requires that the secondary side water temperature of each SG be ≤ [50]°F above each of the RCS cold leg temperatures before the start of an RCP with any RCS cold leg temperature ≤ [275°F] [Low Temperature Overpressure Protection (LTOP) arming temperature specified in the PTLR]. This restraint is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.

TSTF-449, Rev. 4

An OPERABLE RCS loop comprises an OPERABLE RCP and an OPERABLE SG in accordance with the Steam Generator Tube Surveillance Program, which has the minimum water level specified in SR 3.4.6.2.

Similarly for the RHR System, an OPERABLE RHR loop comprises an OPERABLE RHR pump capable of providing forced flow to an OPERABLE RHR heat exchanger. RCPs and RHR pumps are

BASES

LCO (continued)

7

when the testing results in the required RHR loop being rendered inoperable. The remaining OPERABLE RHR loop is adequate to provide the required cooling during the time allowed by Note 2.

b. Core outlet temperature is maintained at least 10°F below saturation temperature, so that no vapor bubble may form and possibly cause a natural circulation flow obstruction.

Note 2 allows one RHR loop to be inoperable for a period of up to 2 hours, provided that the other RHR loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed ~~on the inoperable loop during the only time when such testing is safe and possible~~.

1

non-isolated

<

the first

≤ [50]°F above each of the RCS cold leg temperatures before the start of a reactor coolant pump (RCP) with an RCS cold leg temperature ~~≤ [275°F] [Low Temperature Overpressure Protection (LTOP) arming~~ temperature specified in the PTLR]. This restriction is to prevent a low temperature overpressure event due to a thermal transient when an RCP is started.

the enable

Note 4 provides for an orderly transition from MODE 5 to MODE 4 during a planned heatup by permitting removal of RHR loops from operation when at least one RCS loop is in operation. This Note provides for the transition to MODE 4 where an RCS loop is permitted to be in operation and replaces the RCS circulation function provided by the RHR loops.

TSTF-449, Rev. 4

RHR pumps are OPERABLE if they are capable of being powered and are able to provide flow if required. ~~An OPERABLE~~ SG can perform as a heat sink via natural circulation when it has an adequate water level and is OPERABLE ~~in accordance with the Steam Generator Tube Surveillance Program~~.

1

unisolated and

APPLICABILITY

In MODE 5 with RCS loops filled, this LCO requires forced circulation of the reactor coolant to remove decay heat from the core and to provide proper boron mixing. One loop of RHR provides sufficient circulation for these purposes. However, one additional RHR loop is required to be OPERABLE, or the secondary side water level of at least ~~[two]~~ SGs is required to be ≥ ~~[17]%~~.

at least one

28% for Unit 1 or
≥ 15.5% for Unit 2

one unisolated

By permitting the removal of the RHR loops from operation this Note also eliminates the LCO requirement for an RCS loop to provide cooling via natural circulation.

CTS

Operation in other MODES is covered by:

LCO 3.4.4, "RCS Loops - MODES 1 and 2;"
LCO 3.4.5, "RCS Loops - MODE 3;"
LCO 3.4.6, "RCS Loops - MODE 4;"
LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled;"

6

BASES

APPLICABLE SAFETY ANALYSES

Except for primary to secondary LEAKAGE, the safety analyses do not address operational LEAKAGE. However, other operational LEAKAGE is related to the safety analyses for LOCA; the amount of leakage can affect the probability of such an event. ~~The safety analysis for an event resulting in steam discharge to the atmosphere assumes a 1 gpm primary to secondary LEAKAGE as the initial condition.~~

2

INSERT 1

~~Primary to secondary LEAKAGE is a factor in the dose releases outside containment resulting from a steam line break (SLB) accident. To a lesser extent, other accidents or transients involve secondary steam release to the atmosphere, such as a steam generator tube rupture (SGTR). The leakage contaminates the secondary fluid.~~

~~The FSAR (Ref. 3) analysis for SGTR assumes the contaminated secondary fluid is only briefly released via safety valves and the majority is steamed to the condenser. The 1 gpm primary to secondary LEAKAGE is relatively inconsequential.~~

~~The SLB is more limiting for site radiation releases. The safety analysis for the SLB accident assumes 1 gpm primary to secondary LEAKAGE in one generator as an initial condition. The dose consequences resulting from the SLB accident are well within the limits defined in 10 CFR 100 or the staff approved licensing basis (i.e., a small fraction of these limits).~~

The RCS operational LEAKAGE satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

RCS operational LEAKAGE shall be limited to:

a. Pressure Boundary LEAKAGE

No pressure boundary LEAKAGE is allowed, being indicative of material deterioration. LEAKAGE of this type is unacceptable as the leak itself could cause further deterioration, resulting in higher LEAKAGE. Violation of this LCO could result in continued degradation of the RCPB. LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE.

b. Unidentified LEAKAGE

One gallon per minute (gpm) of unidentified LEAKAGE is allowed as a reasonable minimum detectable amount that the containment air monitoring and containment sump level monitoring equipment can detect within a reasonable time period. Violation of this LCO could

Rev. 3 Change 2

BASES

LCO (continued)

result in continued degradation of the RCPB, if the LEAKAGE is from the pressure boundary.

c. Identified LEAKAGE

Up to 10 gpm of identified LEAKAGE is considered allowable because LEAKAGE is from known sources that do not interfere with detection of unidentified LEAKAGE and is well within the capability of the RCS Makeup System. Identified LEAKAGE includes LEAKAGE to the containment from specifically known and located sources, but does not include pressure boundary LEAKAGE or controlled reactor coolant pump (RCP) seal leakoff (a normal function not considered LEAKAGE). Violation of this LCO could result in continued degradation of a component or system.

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3

d. ~~Primary to Secondary LEAKAGE through All Steam Generators (SGs)~~

~~Total primary to secondary LEAKAGE amounting to 1 gpm through all SGs produces acceptable offsite doses in the SLB accident analysis. Violation of this LCO could exceed the offsite dose limits for this accident. Primary to secondary LEAKAGE must be included in the total allowable limit for identified LEAKAGE.~~

d.

~~e.~~ Primary to Secondary LEAKAGE through Any One SG

INSERT 2

~~The [500] gallons per day limit on one SG is based on the assumption that a single crack leaking this amount would not propagate to a SGTR under the stress conditions of a LOCA or a main steam line rupture. If leaked through many cracks, the cracks are very small, and the above assumption is conservative.~~

APPLICABILITY In MODES 1, 2, 3, and 4, the potential for RCPB LEAKAGE is greatest when the RCS is pressurized.

In MODES 5 and 6, LEAKAGE limits are not required because the reactor coolant pressure is far lower, resulting in lower stresses and reduced potentials for LEAKAGE.

LCO 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," measures leakage through each individual PIV and can impact this LCO. Of the two PIVs in series in each isolated line, leakage measured through one PIV does not result in RCS LEAKAGE when the other is leak tight. If both

Rev. 3, Change 2

BASES

APPLICABILITY (continued)

valves leak and result in a loss of mass from the RCS, the loss must be included in the allowable identified LEAKAGE.

ACTIONS

A.1

or

Unidentified LEAKAGE, identified LEAKAGE, ~~or primary to secondary LEAKAGE~~ in excess of the LCO limits must be reduced to within limits within 4 hours. This Completion Time allows time to verify leakage rates and either identify unidentified LEAKAGE or reduce LEAKAGE to within limits before the reactor must be shut down. This action is necessary to prevent further deterioration of the RCPB.

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B.1 and B.2

or primary to secondary LEAKAGE is not within limit,

If any pressure boundary LEAKAGE exists, or if unidentified ~~LEAKAGE,~~ identified LEAKAGE, ~~or primary to secondary LEAKAGE~~ cannot be reduced to within limits within 4 hours, the reactor must be brought to lower pressure conditions to reduce the severity of the LEAKAGE and its potential consequences. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. The reactor must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. This action reduces the LEAKAGE and also reduces the factors that tend to degrade the pressure boundary.

or

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODE 5, the pressure stresses acting on the RCPB are much lower, and further deterioration is much less likely.

SURVEILLANCE REQUIREMENTS

SR 3.4.13.1

Verifying RCS LEAKAGE to be within the LCO limits ensures the integrity of the RCPB is maintained. Pressure boundary LEAKAGE would at first appear as unidentified LEAKAGE and can only be positively identified by inspection. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. Unidentified LEAKAGE and identified LEAKAGE are determined by performance of an RCS water inventory balance. ~~Primary to secondary LEAKAGE is also measured by performance of an RCS water inventory balance in conjunction with effluent monitoring within the secondary steam and feedwater systems.~~

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BASES

TSTF-116

(stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown and RCP seal injection and return flows).

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance is modified by two Notes.

1 states

TSTF-449, Rev. 4

The RCS water inventory balance must be met with the reactor at steady state operating conditions. ~~Therefore, a~~ Note ~~is added allowing~~ that this SR is not required to be performed until 12 hours after establishing steady state operation. The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.

Note 2 states that this SR is not applicable to primary to secondary LEAKAGE because LEAKAGE of 150 gallons per day cannot be measured accurately by an RCS water inventory balance.

Steady state operation is required to perform a proper inventory balance since calculations during maneuvering are not useful. For RCS operational LEAKAGE determination by water inventory balance, steady state is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows.

instrumentation

4

An early warning of pressure boundary LEAKAGE or unidentified LEAKAGE is provided by the ~~automatic~~ systems that monitor the containment atmosphere radioactivity and the containment sump level. It should be noted that LEAKAGE past seals and gaskets is not pressure boundary LEAKAGE. These leakage detection systems are specified in LCO 3.4.15, "RCS Leakage Detection Instrumentation."

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INSERT 3

The 72 hour Frequency is a reasonable interval to trend LEAKAGE and recognizes the importance of early leakage detection in the prevention of accidents.

SR 3.4.13.2

~~This SR provides the means necessary to determine SG OPERABILITY in an operational MODE. The requirement to demonstrate SG tube integrity in accordance with the Steam Generator Tube Surveillance Program emphasizes the importance of SG tube integrity, even though this Surveillance cannot be performed at normal operating conditions.~~

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 30.~~
2. ~~Regulatory Guide 1.45, May 1973.~~
3. ~~FSAR, Section [15].~~

UFSAR Section 4.2.7.1 (Unit 1) and UFSAR Section 5.2.5 (Unit 2).

1

NRC Generic Letter 95-05: Voltage-Based Repair *Criteria For Westinghouse Steam Generator Tubes* Affected By Outside Diameter Stress Corrosion Cracking

Unit 1 UFSAR Appendix 1A, "1971 AEC General Design Criteria Conformance" and Unit 2 UFSAR Section 3.1, "Conformance with U. S. Nuclear Regulatory Commission General Design Criteria"

4. NEI 97-06, "Steam Generator Program Guidelines."
5. EPRI, "Pressurized Water Reactor Primary-to-Secondary Leak Guidelines."

3

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Rev. 3, Change 2

BASES INSERTS FOR 3.4.13

1. Primary-to-secondary LEAKAGE is a factor in the dose assessment of accidents or transients that involve secondary steam release to the atmosphere, such as a main steam line break (MSLB), a locked rotor accident (LRA), a Loss of AC Power (LACP), a Control Rod Ejection Accident (CREA) and to a lesser extent, a Steam Generator Tube Rupture (SGTR). The leakage contaminates the secondary fluid. The limit on the primary to secondary leakage ensures that the dose contribution at the site boundary from tube leakage following such accidents are limited to appropriate fractions of the 10 CFR 50.67 limit of 25 Rem TEDE as allowable by Regulatory Guide 1.183. The limit on the primary to secondary leakage also ensures that the dose contribution from tube leakage in the control room is limited to the 10 CFR 50.67 limit of 5 Rem TEDE. Among all of the analyses that release primary side activity to the environment via tube leakage, the MSLB is of particular concern because the ruptured main steam line provides a pathway to release the primary to secondary leakage directly to the environment without dilution in the secondary fluid.

   For BVPS-1, the safety analysis for an event resulting in steam discharge to the atmosphere conservatively assumes a 450 gallons per day (gpd) primary-to-secondary LEAKAGE (150 gpd per steam generator).

   For BVPS-2, due to adoption of the voltage based steam generator tube repair criteria per guidance provided by Generic Letter 95-05 (Reference 3), the safety analysis for an event resulting in steam discharge to the atmosphere conservatively assumes a 450 gpd primary-to-secondary LEAKAGE (150 gpd per steam generator) for all accidents other than the MSLB. The dose consequences associated with the MSLB addresses an accident-induced leakage, which, per GL 95-05, is postulated to occur (via pre-existing tube defects) as a result of the rapid depressurization of the secondary side due to the MLSB, and the consequent high differential pressure across the faulted steam generator. The maximum allowed accident induced leakage for BVPS-2 is 2.1 gpm.

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2. The limit of 150 gallons per day per SG is based on the operational LEAKAGE performance criterion in NEI 97-06, Steam Generator Program Guidelines (Ref. 4). The Steam Generator Program operational LEAKAGE performance criterion in NEI 97-06 states, "The RCS operational primary to secondary leakage through any one SG shall be limited to 150 gallons per day." The limit is based on operating experience with SG tube degradation mechanisms that result in tube leakage. The operational leakage rate criterion in conjunction with the implementation of the Steam Generator Program is an effective measure for minimizing the frequency of steam generator tube ruptures.

3. This SR verifies that primary to secondary LEAKAGE is less or equal to 150 gallons per day through any one SG. Satisfying the primary to secondary LEAKAGE limit ensures that the operational LEAKAGE performance criterion in the Steam Generator Program is met. If this SR is not met, compliance with LCO 3.4.20, "Steam Generator Tube Integrity," should be evaluated. The 150 gallons per day limit is measured at room temperature (25°C) as described in Reference 5. The operational LEAKAGE rate limit applies to LEAKAGE through any one SG. If it is not practical to assign the LEAKAGE to an individual SG, all the primary to secondary LEAKAGE should be conservatively assumed to be from one SG.

   The Surveillance is modified by a Note which states that the Surveillance is not required to be performed until 12 hours after establishment of steady state operation. For RCS primary to secondary LEAKAGE determination, steady state is defined as stable RCS pressure,

Rev. 3, Change 2

TSTF-449, Rev. 4

BASES INSERTS FOR 3.4.13

temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows.

The Surveillance Frequency of 72 hours is a reasonable interval to trend primary to secondary LEAKAGE and recognizes the importance of early leakage detection in the prevention of accidents. The primary to secondary LEAKAGE is determined using continuous process radiation monitors or radiochemical grab sampling in accordance with the EPRI guidelines (Ref. 5).

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.20 Steam Generator (SG) Tube Integrity

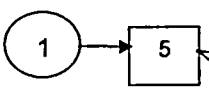
BASES

BACKGROUND

Steam generator (SG) tubes are small diameter, thin walled tubes that carry primary coolant through the primary to secondary heat exchangers. The SG tubes have a number of important safety functions. Steam generator tubes are an integral part of the reactor coolant pressure boundary (RCPB) and, as such, are relied on to maintain the primary system's pressure and inventory. The SG tubes isolate the radioactive fission products in the primary coolant from the secondary system. In addition, as part of the RCPB, the SG tubes are unique in that they act as the heat transfer surface between the primary and secondary systems to remove heat from the primary system. This Specification addresses only the RCPB integrity function of the SG. The SG heat removal function is addressed by LCO 3.4.4, "RCS Loops – MODES 1 and 2," LCO 3.4.5, "RCS Loops – MODE 3," LCO 3.4.6, "RCS Loops – MODE 4," and LCO 3.4.7, "RCS Loops – MODE 5, Loops Filled."

SG tube integrity means that the tubes are capable of performing their intended RCPB safety function consistent with the licensing basis, including applicable regulatory requirements.

Steam generator tubing is subject to a variety of degradation mechanisms. Steam generator tubes may experience tube degradation related to corrosion phenomena, such as wastage, pitting, intergranular attack, and stress corrosion cracking, along with other mechanically induced phenomena such as denting and wear. These degradation mechanisms can impair tube integrity if they are not managed effectively. The SG performance criteria are used to manage SG tube degradation.



Specification 5.5.9, "Steam Generator (SG) Program," requires that a program be established and implemented to ensure that SG tube integrity is maintained. Pursuant to Specification 5.5.9, tube integrity is maintained when the SG performance criteria are met. There are three SG performance criteria: structural integrity, accident induced leakage, and operational LEAKAGE. The SG performance criteria are described in Specification 5.5.9. Meeting the SG performance criteria provides reasonable assurance of maintaining tube integrity at normal and accident conditions.

The processes used to meet the SG performance criteria are defined by the Steam Generator Program Guidelines (Ref. 1).

BASES

APPLICABLE SAFETY ANALYSES

The steam generator tube rupture (SGTR) accident is the limiting design basis event for SG tubes and avoiding an SGTR is the basis for this Specification. The analysis of a SGTR event assumes a bounding primary to secondary LEAKAGE rate equal to the operational LEAKAGE rate limits in LCO 3.4.13, "RCS Operational LEAKAGE," plus the leakage rate associated with a double-ended rupture of a single tube. The accident analysis for a SGTR assumes the contaminated secondary fluid is only briefly released to the atmosphere via safety valves and the majority is discharged to the main condenser.

accident analysis for a SGTR assumes that following reactor trip the contaminated secondary fluid is released to the atmosphere via safety valves. Environmental releases before reactor trip are discharged through the main condenser.

1

INSERT 1

The analysis for design basis accidents and transients other than a SGTR assume the SG tubes retain their structural integrity (i.e., they are assumed not to rupture.) In these analyses, the steam discharge to the atmosphere is based on the total primary to secondary LEAKAGE from all SGs of [1 gallon per minute] or is assumed to increase to [1 gallon per minute] as a result of accident induced conditions. For accidents that do not involve fuel damage, the primary coolant activity level of DOSE EQUIVALENT I-131 is assumed to be equal to the LCO 3.4.16, "RCS Specific Activity," limits. For accidents that assume fuel damage, the primary coolant activity is a function of the amount of activity released from the damaged fuel. The dose consequences of these events are within the limits of GDC 19 (Ref. 2), 10 CFR 100 (Ref. 3) or the NRC approved licensing basis (e.g., a small fraction of these limits).

A Note modifies the LCO to indicate that any reference to the repair of SG tubes is only applicable to Unit 2 at this time. The Unit 1 "Steam Generator Program" (in Specification 5.5.5) has no provision for SG tube repair.

Steam generator tube integrity satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

1

LCO

The LCO requires that SG tube integrity be maintained. The LCO also requires that all SG tubes that satisfy the repair criteria be plugged [or repaired] in accordance with the Steam Generator Program.

During an SG inspection, any inspected tube that satisfies the Steam Generator Program repair criteria is [repaired or] removed from service by plugging. If a tube was determined to satisfy the repair criteria but was not plugged [or repaired], the tube may still have tube integrity.

In the context of this Specification, a SG tube is defined as the entire length of the tube, including the tube wall [and any repairs made to it], between the tube-to-tubesheet weld at the tube inlet and the tube-to-tubesheet weld at the tube outlet. The tube-to-tubesheet weld is not considered part of the tube.

5

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A SG tube has tube integrity when it satisfies the SG performance criteria. The SG performance criteria are defined in Specification 5.5.9, "Steam Generator Program," and describe acceptable SG tube performance. The Steam Generator Program also provides the evaluation process for determining conformance with the SG performance criteria.

Rev. 3, Change 2

BASES

LCO (continued)

There are three SG performance criteria: structural integrity, accident induced leakage, and operational LEAKAGE. Failure to meet any one of these criteria is considered failure to meet the LCO.

The structural integrity performance criterion provides a margin of safety against tube burst or collapse under normal and accident conditions, and ensures structural integrity of the SG tubes under all anticipated transients included in the design specification. Tube burst is defined as, "The gross structural failure of the tube wall. The condition typically corresponds to an unstable opening displacement (e.g., opening area increased in response to constant pressure) accompanied by ductile (plastic) tearing of the tube material at the ends of the degradation." Tube collapse is defined as, "For the load displacement curve for a given structure, collapse occurs at the top of the load versus displacement curve where the slope of the curve becomes zero." The structural integrity performance criterion provides guidance on assessing loads that have a significant effect on burst or collapse. In that context, the term "significant" is defined as "An accident loading condition other than differential pressure is considered significant when the addition of such loads in the assessment of the structural integrity performance criterion could cause a lower structural limit or limiting burst/collapse condition to be established." For tube integrity evaluations, except for circumferential degradation, axial thermal loads are classified as secondary loads. For circumferential degradation, the classification of axial thermal loads as primary or secondary loads will be evaluated on a case-by-case basis. The division between primary and secondary classifications will be based on detailed analysis and/or testing.

7 6 1

Structural integrity requires that the primary membrane stress intensity in a tube not exceed the yield strength for all ASME Code, Section III, Service Level A (normal operating conditions) and Service Level B (upset or abnormal conditions) transients included in the design specification. This includes safety factors and applicable design basis loads based on ASME Code, Section III, Subsection NB (Ref. ~~4~~) and Draft Regulatory Guide 1.121 (Ref. ~~5~~).

as described in the Applicable Safety Analyses section of this Bases.

The accident induced leakage performance criterion ensures that the primary to secondary LEAKAGE caused by a design basis accident, other than a SGTR, is within the accident analysis assumptions. ~~The accident analysis assumes that accident induced leakage does not exceed [1 gpm per SG, except for specific types of degradation at specific locations where the NRC has approved greater accident induced leakage.] The accident induced leakage rate includes any primary to secondary LEAKAGE existing prior to the accident in addition to primary to secondary LEAKAGE induced during the accident.~~

2

BASES

LCO (continued)

The operational LEAKAGE performance criterion provides an observable indication of SG tube conditions during plant operation. The limit on operational LEAKAGE is contained in LCO 3.4.13, "RCS Operational LEAKAGE," and limits primary to secondary LEAKAGE through any one SG to 150 gallons per day. This limit is based on the assumption that a *single crack leaking this amount would not propagate to a SGTR under* the stress conditions of a LOCA or a main steam line break. If this amount of LEAKAGE is due to more than one crack, the cracks are very small, and the above assumption is conservative.

APPLICABILITY

Steam generator tube integrity is challenged when the pressure differential across the tubes is large. Large differential pressures across SG tubes can only be experienced in MODE 1, 2, 3, or 4.

RCS conditions are far less challenging in MODES 5 and 6 than during MODES 1, 2, 3, and 4. In MODES 5 and 6, primary to secondary differential pressure is low, resulting in lower stresses and reduced potential for LEAKAGE.

1

ACTIONS

A Note modifies Condition A and Required Action A.2 to indicate that any reference to the repair of SG tubes is only applicable to Unit 2 at this time. The Unit 1 "Steam Generator Program" (in Specification 5.5.5) has no provision for SG tube repair.

The ACTIONS are modified by a Note clarifying that the Conditions may be entered independently for each SG tube. This is acceptable because the Required Actions provide appropriate compensatory actions for each affected SG tube. Complying with the Required Actions may allow for continued operation, and subsequent affected SG tubes are governed by *subsequent Condition entry and application of associated Required* Actions.

A.1 and A.2

Condition A applies if it is discovered that one or more SG tubes examined in an inservice inspection satisfy the tube repair criteria but were not plugged [or repaired] in accordance with the Steam Generator Program as required by SR 3.4.20.2. An evaluation of SG tube integrity of the affected tube(s) must be made. Steam generator tube integrity is based on meeting the SG performance criteria described in the Steam Generator Program. The SG repair criteria define limits on SG tube degradation that allow for flaw growth between inspections while still providing assurance that the SG performance criteria will continue to be met. In order to determine if a SG tube that should have been plugged [or repaired] has tube integrity, an evaluation must be completed that demonstrates that the SG performance criteria will continue to be met until the next refueling outage or SG tube inspection. The tube integrity

BASES

ACTIONS (continued)

determination is based on the estimated condition of the tube at the time the situation is discovered and the estimated growth of the degradation prior to the next SG tube inspection. If it is determined that tube integrity is not being maintained, Condition B applies.

A Completion Time of 7 days is sufficient to complete the evaluation while minimizing the risk of plant operation with a SG tube that may not have tube integrity.

If the evaluation determines that the affected tube(s) have tube integrity, Required Action A.2 allows plant operation to continue until the next refueling outage or SG inspection provided the inspection interval continues to be supported by an operational assessment that reflects the affected tubes. However, the affected tube(s) must be plugged [or repaired] prior to entering MODE 4 following the next refueling outage or SG inspection. This Completion Time is acceptable since operation until the next inspection is supported by the operational assessment.

B.1 and B.2

If the Required Actions and associated Completion Times of Condition A are not met or if SG tube integrity is not being maintained, the reactor must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the desired plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.20.1

During shutdown periods the SGs are inspected as required by this SR and the Steam Generator Program. NEI 97-06, Steam Generator Program Guidelines (Ref. 1), and its referenced EPRI Guidelines, establish the content of the Steam Generator Program. Use of the Steam Generator Program ensures that the inspection is appropriate and consistent with accepted industry practices.

During SG inspections a condition monitoring assessment of the SG tubes is performed. The condition monitoring assessment determines the "as found" condition of the SG tubes. The purpose of the condition monitoring assessment is to ensure that the SG performance criteria have been met for the previous operating period.

BASES

in conjunction with the degradation assessment

SURVEILLANCE REQUIREMENTS (continued)

and the degradation assessment

1

The Steam Generator Program determines the scope of the inspection and the methods used to determine whether the tubes contain flaws satisfying the tube repair criteria. Inspection scope (i.e., which tubes or areas of tubing within the SG are to be inspected) is a function of existing and potential degradation locations. The Steam Generator Program also specifies the inspection methods to be used to find potential degradation. Inspection methods are a function of degradation morphology, non-destructive examination (NDE) technique capabilities, and inspection locations.

y

8

1

The Steam Generator Program defines the Frequency of SR 3.4.20.1. The Frequency is determined by the operational assessment and other limits in the SG examination guidelines (Ref. 6). The Steam Generator Program uses information on existing degradations and growth rates to determine an inspection Frequency that provides reasonable assurance that the tubing will meet the SG performance criteria at the next scheduled inspection. In addition, Specification 5.5.9 contains prescriptive requirements concerning inspection intervals to provide added assurance that the SG performance criteria will be met between scheduled inspections.

5

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1

A Note modifies SR 3.4.20.2 to indicate that any reference to the repair of SG tubes is only applicable to Unit 2 at this time. The Unit 1 "Steam Generator Program" (in Specification 5.5.5) has no provision for SG tube repair.

SR 3.4.20.2

During an SG inspection, any inspected tube that satisfies the Steam Generator Program repair criteria is [repaired or] removed from service by plugging. The tube repair criteria delineated in Specification 5.5.9 are intended to ensure that tubes accepted for continued service satisfy the SG performance criteria with allowance for error in the flaw size measurement and for future flaw growth. In addition, the tube repair criteria, in conjunction with other elements of the Steam Generator Program, ensure that the SG performance criteria will continue to be met until the next inspection of the subject tube(s). Reference 1 provides guidance for performing operational assessments to verify that the tubes remaining in service will continue to meet the SG performance criteria.

5

2

[Steam generator tube repairs are only performed using approved repair methods as described in the Steam Generator Program.]

(Specification 5.5.5).

The Frequency of prior to entering MODE 4 following a SG inspection ensures that the Surveillance has been completed and all tubes meeting the repair criteria are plugged [or repaired] prior to subjecting the SG tubes to significant primary to secondary pressure differential.

1

BASES

2. 10 CFR 50.67, Accident Source Term.

REFERENCES

1. NEI 97-06, "Steam Generator Program Guidelines."

4 → 2. 10 CFR 50 Appendix A, GDC 19.

3. ~~10 CFR 100.~~ ← Regulatory Guide 1.183, "Alternative Radiological Source Terms For Evaluating Design Basis Accidents At Nuclear Power Reactors."

6 → ~~4.~~ ASME Boiler and Pressure Vessel Code, Section III, Subsection NB.

7 → ~~5.~~ Draft Regulatory Guide 1.121, "Basis for Plugging Degraded Steam Generator Tubes," August 1976.

8 → ~~6.~~ EPRI, "Pressurized Water Reactor Steam Generator Examination Guidelines."

5. NRC Generic Letter 95-05, "Voltage-Based Repair Criteria For Westinghouse Steam Generator Tubes Affected By Outside Diameter Stress Corrosion Cracking."

BASES INSERTS FOR ITS 3.4.20

1. For accidents that do not involve fuel damage, the primary coolant activity level of DOSE EQUIVALENT I-131 is assumed to be equal to the LCO 3.4.16, "RCS Specific Activity," limits. Pre-accident and concurrent iodine spikes are assumed in accordance with applicable regulatory guidance. For accidents that assume fuel damage, the primary coolant activity is a function of the amount of activity released from the damaged fuel. The dose consequences of these events are within the limits of 10 CFR 50.67 (Ref. 2) as supplemented by Regulatory Guide 1.183 (Ref. 3) and within GDC-19 (Ref. 4) values.

Unit 1:

The analysis for design basis accidents and transients other than a SGTR assume the SG tubes retain their structural integrity (i.e., they are assumed not to rupture.) In these analyses, the steam discharge to the atmosphere includes primary to secondary SG tube LEAKAGE equivalent to the operational leakage limit of 150 gpd per SG.

Unit 2:

The analysis for most design basis accidents and transients other than a SGTR assume the SG tubes retain their structural integrity (i.e., they are assumed not to rupture) and the steam discharge to the atmosphere is assumed to include primary to secondary SG tube LEAKAGE equivalent to the operational leakage limit of 150 gpd per SG. However, an exception to the assumption that the SG tubes retain their structural integrity is applied in the Unit 2 MSLB analysis. In support of voltage based repair criteria, analyses were performed pursuant to Generic Letter 95-05 (Ref. 5) to determine the maximum main steam line break (MSLB) induced primary to secondary leak rate that could occur without offsite doses exceeding the limits of 10 CFR 50.67 (Ref. 2) as supplemented by Regulatory Guide 1.183 (Ref. 3) and without control room doses exceeding GDC-19. The accident induced leakage adds 2.1 gpm to the total leakage assumed in the Unit 2 MSLB analysis. Therefore, in the MSLB analysis, the steam discharge to the atmosphere includes primary to secondary SG tube LEAKAGE equivalent to the operational leakage limit of 150 gpd per SG and the 2.1 gpm accident induced leakage which results in a total assumed leakage of 2.4 gpm. The combined projected leak rate from all alternate repair criteria (i.e., voltage based repair criteria and application of F*) must be less than the maximum allowable steam line break leak rate limit in any one steam generator in order to maintain doses within the limits of 10 CFR 50.67 (Ref. 2) as supplemented by Regulatory Guide 1.183 (Ref. 3) and within GDC-19 (Ref. 4) values during a postulated steam line break event.

ITS 3.4.20 RCS Loops – SG Tube Integrity Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The generic ISTS Bases text is revised as necessary to conform to BVPS specific design and safety analyses as well as the BVPS specific ITS numbering and references. These modifications of the ISTS bases include such things as changes to incorporate Unit 1 and 2 differences and to insert additional BVPS specific text from the corresponding CTS Bases. These changes are necessary to make the generic ISTS bases conform to a BVPS Unit 1 and Unit 2 specific ITS Bases.

2. Editorial changes are made to the generic bases text to enhance existing descriptions, better integrate changes, or avoid the repetition of detailed descriptions already provided in the bases.

~~3/4.4.5~~ STEAM GENERATOR (SG) TUBE INTEGRITY

A1

3.4.20

LIMITING CONDITION FOR OPERATION

~~3.4.5~~ SG tube integrity shall be maintained

AND

All SG tubes satisfying the tube repair criteria shall be plugged or repaired in accordance with the Steam Generator Program.

(1)

A2

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- - - - - - - - - - - - - - - - GENERAL NOTE- - - - - - - - - - - - - - -

Separate action statement entry is allowed for each SG tube.

- -

Cond. A ~~a.~~ With one or more SG tubes satisfying the tube repair criteria and not plugged or repaired in accordance with the Steam Generator Program: (1)

Action A.1 → ~~1.~~ Verify within 7 days that tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection.

Action A.2 → ~~2.~~ Plug or repair the affected tube(s) in accordance with the Steam Generator Program prior to entering MODE 4 following the next refueling outage or SG tube inspection.

Cond. B Actions B.1 & B.2 → ~~b.~~ With Action a not being completed within the specified completion time or if SG tube integrity is not being maintained, be in Mode 3 within 6 hours and in Mode 5 within the following 30 hours.

SR 3.4.20.1

A2

SURVEILLANCE REQUIREMENTS

~~4.4.5.1~~ Verify SG tube integrity in accordance with the Steam Generator Program. (1)

~~4.4.5.2~~ Verify that each inspected SG tube that satisfies the tube repair criteria is plugged or repaired in accordance with the Steam Generator Program prior to entering MODE 4 following a SG tube inspection.

(1) SG Tube repair is only applicable to Unit 2.

A2

SR 3.4.20.2

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OPERATIONAL LEAKAGE

ITS 3.4.13

A1

LIMITING CONDITION FOR OPERATION

~~3.4.6.2~~ Reactor Coolant System operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE,

b. 1 gpm unidentified LEAKAGE,

c. 150 gallons per day primary to secondary LEAKAGE through any one steam generator, and

d. 10 gpm identified LEAKAGE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Cond. A a. With any Reactor Coolant System operational LEAKAGE not within limits for reasons other then pressure boundary LEAKAGE or primary to secondary LEAKAGE, reduce the LEAKAGE to within limits within 4 hours.

Cond. B b. With the required action and associated completion time of Action a not met, or with pressure boundary LEAKAGE or with primary to secondary LEAKAGE not within limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

~~4.4.6.2~~ Reactor Coolant System operational LEAKAGES shall be demonstrated to be within each of the above limits by:

L1

~~a. Monitoring the following leakage detection instrumentation at least once per 12 hours:~~ (1)

~~1. Containment atmosphere gaseous radioactivity monitor.~~

~~(1) Only on leakage detection instrumentation required by LCO 3.4.6.1.~~

Rev. 3, Change 2

Draft Page from Unit 2 LAR 196 (Unit 1 LAR 324)

L1

SURVEILLANCE REQUIREMENTS (Continued)

~~2. Containment atmosphere particulate radioactivity monitor.~~

~~3. Containment sump discharge flow monitor.~~

~~4. Containment sump narrow range level monitor.~~

SR 3.4.13.1

~~b.~~ Performance of a Reactor Coolant System water inventory balance at least once per 72 hours.~~(2) (3)~~

~~c.~~ Verifying primary to secondary LEAKAGE is less than or equal to 150 gallons per day through any one steam generator at least once per 72 hours.~~(2)~~

SR 3.4.13.2

Note in SR 3.4.13.1 & SR 3.4.13.2

~~(2)~~ Not required to be performed until 12 hours after establishment of steady state operation.

~~(3)~~ Not applicable to primary to secondary LEAKAGE.

Note 2 in SR 3.4.13.1

CTS 3.4.5 Steam Generator (SG) Tube Integrity
ITS 3.4.20 Steam Generator (SG) Tube Integrity
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, *including all significant format changes made to update the older NUREG-0452* Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 Unit 2 CTS 3.4.5, Steam Generator (SG) Tube Integrity provides the requirements *regarding SG tube integrity and the requirement to plug or repair tubes meeting the* Steam Generator Program criteria. The Unit 1 CTS 3.4.5 provides the same requirements as the Unit 2 CTS, with the exception that the Unit 1 CTS 3.4.5 does not contain any provisions for SG tube repair. As the Unit 1 SGs are relatively new, no approved tube repair provisions are currently included in the Unit 1 Steam Generator Program. Therefore, based on the BVPS ITS being a common set of technical specifications for both Unit 1 and Unit 2 a modification is proposed to the Unit 2 CTS 3.4.5 to make it acceptable for use by both Units. The proposed modification would annotate each occurrence of the word "repair" or "repaired" with footnote (1). Proposed footnote (1) states that "SG Tube Repair is only applicable to Unit 2." The proposed Note would clarify the fact that Unit 1 currently does not have approved SG tube repair provisions in the Unit 1 Steam Generator Program. In this manner the Unit 1 and Unit 2 CTS 3.4.5 can be combined into a single ITS 3.4.20 without introducing any technical changes to the CTS. As this change maintains the CTS requirements and does not introduce a new or different requirement for either unit it is designated an administrative change.

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CTS 3.4.6.2 Operational Leakage
ITS 3.4.13 RCS Operational Leakage
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS Surveillances 4.4.6.2.a.1 through a.4 require monitoring the containment atmosphere particulate and gaseous radioactivity monitors and the containment sump level and discharge every 12 hours. The corresponding ISTS requirements in 3.4.13 do not contain requirements to monitor these indications. The CTS is revised to conform to the ISTS. This changes the CTS by eliminating CTS surveillance 4.4.6.2.a.

This change is acceptable because the deleted Surveillance Requirements being eliminated are not necessary to verify that the LCO is being met. The LCO still contains the requirement that the specified leakage limits must be met and still includes a surveillance that periodically measures the RCS leakage and a surveillance that requires the steam generator tubes to be in compliance with the requirements of the Steam Generator Tube Surveillance Program. The remaining requirements in the LCO provide adequate assurance that the LCO limits continue to be met.

Typically, the TS contain surveillance requirements that verify the LCO requirements are met by a quantitative measurement or compliance with measurable criteria. The indications monitored in the Surveillance Requirement being eliminated are not necessarily indications of failure to meet the LCO requirement for RCS operational leakage. However, under SR 3.0.1, failure to meet the Surveillance results in failure to meet the LCO. As these surveillances do not contain an acceptance criterion and a failure to monitor these indications is not necessarily a failure to meet the LCO requirement, the retention of this type of surveillance in the TS is not appropriate and does not conform to typical surveillance requirements. The affected indications do provide useful information to help detect RCS leakage and continue to be required OPERABLE by ITS 3.4.15, "RCS Leakage Detection Instrumentation." TS 3.4.15 includes the requirements to periodically calibrate and check this instrumentation. As such, the TS continue to provide adequate assurance that the instrumentation is available to detect potential RCS leakage. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

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BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
Nos. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 2

AFFECTED PAGES FOR ITS SECTION 5.0 (ADMINISTRATIVE CONTROLS)

ITS SECTION 5.0 (ADMINISTRATIVE CONTROLS) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 14, 28, 33 – 46, 52, 53**
ITS JFDS	**PAGES: 60, 62**
ITS BASES MARKUPS	**PAGES:** None
ITS BASES JFDS	**PAGES:** None
CTS MARKUPS	**PAGES: 81, 81A, 82, 87, 87A – 87F, 91 – 109**
CTS DOCS	**PAGES: 138**

5.5 Programs and Manuals

OM

5.5.8 Inservice Testing Program (continued)

4

ASME ~~Boiler and Pressure Vessel~~ Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

34

and to other normal and accelerated Frequencies specified as 2 years or less in the Inservice Testing Program

b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities,

OM

c. The provisions of SR 3.0.3 are applicable to inservice testing activities, and

d. Nothing in the ASME ~~Boiler and Pressure Vessel~~ Code shall be construed to supersede the requirements of any TS.

5

5.5.9 Steam Generator (SG) ~~Tube Surveillance~~ Program

INSERT 2

17

TSTF-449, Rev. 4

- REVIEWER'S NOTE -

The Licensee's current licensing basis steam generator tube surveillance requirements shall be relocated from the LCO and included here. An appropriate administrative controls program format should be used.

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program test frequencies.

5.5.~~10~~ Secondary Water Chemistry Program

6

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation ~~and low pressure turbine disc stress corrosion cracking~~. The program shall include:

19

a. Identification of a sampling schedule for the critical variables and control points for these variables,

b. Identification of the procedures used to measure the values of the critical variables,

5.6 Reporting Requirements

NUREG-1431, Rev.3

F

5.6.7 Post Accident Monitoring Report

5

TSTF-369

When a report is required by Condition B or ~~G~~ of LCO 3.3.[3], "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

~~5.6.8 [Tendon Surveillance Report~~

~~6~~

~~TSTF-369~~

~~Any abnormal degradation of the containment structure detected during the tests required by the Pre-stressed Concrete Containment Tendon Surveillance Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.]~~

~~7~~

29

~~5.6.9 [Steam Generator Tube Inspection Report]~~

30

~~6~~

~~- REVIEWER'S NOTES -~~

~~1. Reports required by the Licensee's current licensing basis regarding steam generator tube surveillance requirements shall be included here. An appropriate administrative controls format should be used.~~

~~2. These reports may be required covering inspection, test, and maintenance activities. These reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.~~

Insert 9

TSTF-449, Rev. 4

Insert 1 for Section 5.3.1

Each member of the unit and radiation protection staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the following:

- the operations manager as specified in Specification 5.2.2.e,
- the radiation protection manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and
- the technical advisory engineering representative who shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and response analysis of the plant for transients and accidents.

Insert 2 for Section 5.5.5 (from CTS requirements)

A Steam Generator Program for Unit 1 and Unit 2 shall be established and implemented to ensure that SG tube integrity is maintained. Specification 5.5.5.1 (Unit 1) and Specification 5.5.5.2 (Unit 2) below contain provisions that shall be included in each Unit's Steam Generator Program.

5.5.5.1 Unit 1 Steam Generator Program

a. Provisions For Condition Monitoring Assessments.

Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged, to confirm that the performance criteria are being met.

b. Provisions for Performance Criteria for SG Tube Integrity.

SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing

basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is also not to exceed 1 gpm per SG, except during a SG tube rupture.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE.

c. Provisions for SG Tube Repair Criteria.

Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

d. Provisions for SG Tube Inspections.

Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

2. Inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. During each period inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three intervals between refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for

each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one interval between refueling outages (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

5.5.5.2 Unit 2 Steam Generator Program

a. Provisions for Condition Monitoring Assessments.

Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging or repair of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected, plugged, or repaired to confirm that the performance criteria are being met.

b. Provisions for Performance Criteria for SG Tube Integrity.

SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and, except as permitted through application of the alternate repair criteria discussed in Specification 5.5.5.2.c.4, a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

When alternate repair criteria discussed in Specification 5.5.5.2.c.4 are applied to axially oriented outside diameter stress corrosion cracking at tube support plate locations, the probability of burst of one or more indications under postulated main steam line break conditions shall be less than 1×10^{-2}.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is also not to exceed 1 gpm per SG, except during a SG tube rupture or for specific types of degradation at specific locations as described in Specification 5.5.5.2.c.4.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational Leakage".

c. Provisions for SG Tube Repair Criteria

1. Tubes found by inservice inspection to contain a flaw in a non-sleeved region with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged or repaired except if permitted to remain in service through application of the alternate repair criteria discussed in Specification 5.5.5.2.c.4 or if the region of the tube containing the flaw does not require inspection due to application of the F* criterion as discussed in Specification 5.5.5.2.d. Flaws in the region of the tube that does not require inspection due to application of the F* criterion are acceptable for continued operation.

2. Sleeves found by inservice inspection to contain flaws with a depth equal to or exceeding the following percentages of the nominal sleeve wall thickness shall be plugged:

ABB Combustion Engineering TIG welded sleeves:	27%
Westinghouse laser welded sleeves:	25%

3. Tubes with a flaw in a sleeve to tube joint that occurs in the sleeve or in the original tube wall of the joint shall be plugged.

4. The following alternate tube repair criteria may be applied as an alternative to the 40% depth based criteria of Specification 5.5.5.2.c.1:

Tube Support Plate Voltage-Based Repair Criteria

Tube Support Plate Plugging Limit is used for the disposition of an alloy 600 steam generator tube for continued service that is experiencing predominantly axially oriented outside diameter stress corrosion cracking confined within the thickness of the tube support plates. At tube support plate intersections, the plugging (repair) limit is described below:

a) Steam generator tubes, with degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with bobbin voltages less than or equal to 2.0 volts will be allowed to remain in service.

b) Steam generator tubes, with degradation attributed to outside

diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts will be repaired or plugged, except as noted in 5.5.5.2.c.4.c below.

c) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts but less than or equal to the upper voltage repair limit (calculated according to the methodology in Generic Letter 95-05 as supplemented) may remain in service if a rotating pancake coil or acceptable alternative inspection does not detect degradation.

d) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than the upper voltage repair limit (calculated according to the methodology in Generic Letter 95-05 as supplemented) will be plugged or repaired.

e) If an unscheduled mid-cycle inspection is performed, the following mid-cycle repair limits apply instead of the limits specified in 5.5.5.2.c.4.a through 5.5.5.2.c.4.d.

The mid-cycle repair limits are determined from the following equations:

$$V_{MURL} = \frac{V_{SL}}{1.0 + NDE + Gr\left(\frac{CL - \Delta t}{CL}\right)}$$

$$V_{MLRL} = V_{MURL} - (V_{URL} - V_{LRL})\left(\frac{CL - \Delta t}{CL}\right)$$

where:

V_{URL} = upper voltage repair limit

V_{LRL} = lower voltage repair limit

V_{MURL} = mid-cycle upper voltage repair limit based on time into cycle

V_{MLRL} = mid-cycle lower voltage repair limit based on V_{MURL} and time into cycle

Δt = length of time since last scheduled inspection during which V_{URL} and V_{LRL} were implemented

CL = cycle length (the time between two scheduled steam generator inspections)

V_{SL} = structural limit voltage

Gr = average growth rate per cycle length

NDE = 95-percent cumulative probability allowance for nondestructive examination uncertainty (i.e., a value of 20-percent has been approved by NRC). The NDE is

the value provided by the NRC in GL 95-05 as supplemented.

Implementation of these mid-cycle repair limits should follow the same approach as in Specifications 5.5.5.2.c.4.a through 5.5.5.2.c.4.d.

5. Unsleeved tubes with service-induced degradation identified within the F* distance or within 3.0 inches below the top of the tubesheet, whichever is greater, shall be repaired or plugged upon detection.

6. Tubes with service-induced degradation identified within 3.0 inches below the lower end of a sleeve installed in the tubesheet region shall be plugged upon detection.

d. Provisions for SG Tube Inspections

Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. Within the tubesheet this includes only the portion of the tube within the F* distance or within 3.0 inches below the top of the tubesheet, whichever is greater, unless tube sleeves are installed. When a tube sleeve is installed, the inspection extends to a distance of 3.0 inches below the lower end of the sleeve. The portion of the tube within the tubesheet that may be excluded from inspection is based on WCAP-16385-P, Revision 1, "F* Tube Plugging Criterion for Tubes with Degradation in the Tubesheet Roll Expansion Region of the Beaver Valley Unit 2 Steam Generators." The requirement in Specification 5.5.5.2.d.5 is a condition for implementing the F* criterion. The tube-to-tubesheet weld is not part of the tube. In tubes repaired by sleeving, the portion of the original tube wall between the sleeve's joints is not an area requiring re-inspection. In addition to meeting the requirements of d.1, d.2, d.3, and d.4 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

2. Inspect 100% of the tubes at sequential periods of 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. No SG shall operate for more than 24 effective full power months or one interval between refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one interval between refueling outages (whichever is less). If definitive information, such as from

examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

4. Indications left in service as a result of application of the tube support plate voltage-based repair criteria (Specification 5.5.5.2.c.4) shall be inspected by bobbin coil probe during all future refueling outages.

   Implementation of the steam generator tube-to-tube support plate repair criteria requires a 100-percent bobbin coil inspection for hot-leg and cold-leg tube support plate intersections down to the lowest cold-leg tube support plate with known outside diameter stress corrosion cracking (ODSCC) indications. The determination of the lowest cold-leg tube support plate intersections having ODSCC indications shall be based on the performance of at least a 20-percent random sampling of tubes inspected over their full length.

5. When F* inspection methodology is implemented, 100 percent of the active hot leg tubes shall be examined utilizing qualified eddy current techniques from the top of the tubesheet to the F* distance or to 3.0 inches below the top of the tubesheet, whichever is greater. Sleeved tubes shall be examined to 3.0 inches below the lower end of the sleeve.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

f. Provisions for SG Tube Repair Methods

Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

1. ABB Combustion Engineering TIG welded sleeves, CEN-629-P, Revision 02 and CEN-629-P Addendum 1.

2. Westinghouse laser welded sleeves, WCAP-13483, Revision 2.

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Rev. 3, Change 2

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Insert 9 for ITS Section 5.6.6

5.6.6.1 Unit 1 SG Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.5.1, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged to date,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and

h. The effective plugging percentage for all plugging in each SG.

5.6.6.2 Unit 2 SG Tube Inspection Report

1. A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.5.2, Steam Generator (SG) Program. The report shall include:

   a. The scope of inspections performed on each SG,

   b. Active degradation mechanisms found,

   c. Nondestructive examination techniques utilized for each degradation mechanism,

   d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

   e. Number of tubes plugged or repaired during the inspection outage for each active degradation mechanism,

   f. Total number and percentage of tubes plugged or repaired to date,

   g. The results of condition monitoring, including the results of tube pulls and in-situ testing,

   h. The effective plugging percentage for all plugging and tube repairs

in each SG, and

i. Repair method utilized and the number of tubes repaired by each repair method.

2. A report shall be submitted within 90 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.5.2, Steam Generator Program, when voltage based alternate repair criteria have been applied. The report shall include information described in Section 6.b of Attachment 1 to Generic Letter 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking".

3. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the Commission prior to returning the steam generators to service (MODE 4) should any of the following conditions arise:

   a. If circumferential crack-like indications are detected at the tube support plate intersections.

   b. If indications are identified that extend beyond the confines of the tube support plate.

   c. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

4. With respect to tubes where the F* inspection methodology is applied, report the following information to the NRC within 90 days after achieving Mode 4 following the outage in which the F* inspection methodology was applied:

   a. Number of total indications, location of each indication, orientation of each indication, severity of each indication, and whether the indications initiated from the inside or outside surface.

   b. The cumulative number of indications detected in the tubesheet region as a function of elevation within the tubesheet.

   c. The projected end-of-cycle accident-induced leakage from tubesheet indications.

Surveillance Program. The design at BVPS does not include the installation of pre-stressed concrete containment tendons. As such, there is no requirement for this surveillance program in the CTS. Not including this ISTS program in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing and design bases.

16. ISTS 5.5.7 provides requirements for the Reactor Coolant Pump Flywheel Inspection Program. There is no requirement for this program in the CTS. Requirements for reactor coolant pump flywheel inspection are administratively controlled at BVPS Units 1 and 2 in the Inservice Inspection Program. Reactor coolant pump flywheel inspection requirements were removed from the BVPS Unit 1 Technical Specifications by a previous License Amendment Request based upon their inclusion in the Unit 1 Inservice Inspection Program. Subsequent licensing of Unit 2 was made consistent with the licensing bases of Unit 1 and reactor coolant pump flywheel inspection requirements were located in the Unit 2 Inservice Inspection Program. Not including this ISTS program in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing bases. Subsequent specifications in the ITS are renumbered as a result of this change to the ISTS.

17. ISTS 5.5.9 (ITS 5.5.5) provides the requirements for the Steam Generator Program for each BVPS Unit. A separate program (5.5.5.1 & 5.5.5.2) is provided for each BVPS Unit. Consistent with the associated Reviewer's Note, the BVPS Units 1 and 2 licensing basis for the Steam Generator Program as proposed in License Amendment Request (LAR) numbers 324 (Unit 1) and 196 (Unit 2) submitted by FENOC Letter L-05-144 dated 11/7/05 and Unit 2 LAR Number 183 submitted by FENOC Letter L-05-061 dated 4/11/05. These LARs are scheduled to be approved prior to the ITS conversion. LARs 324 and 196 revise the Unit 1 and Unit 2 CTS requirements to incorporate TSTF-449, Revision 4. TSTF-449 revises the definition of Leakage, introduces a new ITS LCO (3.4.20) in Section 3.4 titled Steam Generator Tube Integrity, revises ITS 3.4.13, Operational Leakage, as well as completely revising ITS Specification 5.5.5, and ITS 5.6.6 (for the new Steam Generator Program and associated Reporting requirements). Unit 2 LAR 183 implements F* Tube plugging criteria for the Unit 2 SG tubes with degradation in the tubesheet roll expansion region (in accordance with WCAP-16385-NP, Rev. 1). Unit 2 LAR number 183 also affects the Steam Generator Program and associated reporting requirements. As these LARs are scheduled to be approved separately in advance of the ITS conversion, the BVPS specific implementation of the Steam Generator Program from TSTF-449 (as proposed in LARs 324, 196, and 183) has been incorporated in the ISTS Section 5.5.9. As these LARs are not yet approved, the final form of the technical specifications resulting from these LARs may change and require a further update of the ITS conversion documentation. The final approved pages from these LARs will be incorporated into the ISTS conversion documentation in a future revision.

18. Not used.

19. ISTS 5.5.10 (ITS 5.5.6) provides requirements for the Secondary Water Chemistry Program. ITS 5.5.6 (description of the basis for the program and requirements for including process sampling points for monitoring the discharge of condensate pumps) is revised to reflect the BVPS Units 1 and 2 licensing bases in CTS 6.8.5.

20. ISTS 5.5.11 (ITS 5.5.7) provides requirements for the Ventilation Filter Testing Program. ITS 5.5.7 is revised to reflect the BVPS Units 1 and 2 licensing bases in Unit 1 CTS

does not include the installation of pre-stressed concrete containment tendons. As such, there is no requirement for a surveillance program and no requirement for this report in the CTS. Not including this ISTS reporting requirement in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing and design bases. Subsequent specifications are renumbered as a result of this change to the ISTS.

30. ISTS 5.6.7 (ITS 5.6.6) provides the requirements for the Steam Generator Tube Inspection Report. A separate report subsection (5.6.6.1 & 5.6.6.2) for each BVPS unit is included. Consistent with the associated Reviewer's Note, the BVPS Units 1 and 2 licensing basis for the Steam Generator Tube Inspection Report as proposed in License Amendment Request (LAR) numbers 324 (Unit 1) and 196 (Unit 2) submitted by FENOC Letter L-05-144 dated 11/7/05 and Unit 2 LAR Number 183 submitted by FENOC Letter L-05-061 dated 4/11/05. These LARs are scheduled to be approved prior to the ITS conversion. LARs 324 and 196 revise the Unit 1 and Unit 2 CTS requirements to incorporate TSTF-449, Revision 4. Among other changes, TSTF-449 revises the Steam Generator Tube Inspection Report. Unit 2 LAR 183 implements F* Tube plugging criteria for the Unit 2 SG tubes with degradation in the tubesheet roll expansion region (in accordance with WCAP-16385-NP, Rev. 1) which also affects the Unit 2 Steam Generator Tube Inspection Report. See JFD # 17 for additional information regarding the incorporation of these LARs into the ITS conversion documentation.

31. ISTS 5.7 provides requirements for High Radiation Areas. ITS 5.5.7 is revised to reflect the BVPS Units 1 and 2 licensing bases and High Radiation Area controls. The change is consistent with the requirements in CTS 6.12.

32. ISTS 5.5.12.b (ITS 5.5.8.b) is revised to reflect the BVPS Units 1 and 2 whole body exposure limit consistent with the requirements in CTS 6.8.6.c.2.

33. ISTS 5.5.12 (ITS 5.5.8) states "A surveillance program to ensure that the quantity of radioactivity contained...is less than the amount that would result in concentrations less than the limits..." ITS 5.5.8 is revised to replace the word "less than" with the word "greater than" consistent with CTS 6.8.6.c.3. The change reflects the BVPS Units 1 and 2 licensing basis as accepted by the NRC in a previous BVPS SER. This change includes no new requirements, but only provides a clarification of the phrase. The intent of the phrase is to ensure that the 10 CFR 20 limits are not exceeded.

34. ISTS 5.5.8.b states "The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities." ISTS 5.5.8.a contains a list of test intervals referenced in the ASME Inservice Test Requirements. However, the list of test intervals in ISTS 5.5.8.a is not a comprehensive list of inservice testing intervals. In order to make the provisions of SR 3.0.2 applicable to more Inservice test intervals, proposed ITS 5.5.4.b states "The provisions of SR 3.0.2 are applicable to the above required Frequencies and to other normal and accelerated Frequencies specified as 2 years or less in the Inservice Testing Program for performing inservice testing activities." The proposed ITS 5.5.4.b would be applicable to all test intervals ≤ 2 years referenced in the ASME Inservice Testing requirements and not just the test intervals listed in ISTS 5.5.8.a.

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (Continued)

5.6.4.c

e. The PTLR shall be provided to the NRC upon issuance for each reactor fluence period and for any revision or supplement thereto.

vessel

5.6.6

6.9.7 STEAM GENERATOR TUBE INSPECTION REPORT

5.6.6.1 Unit 1 SG Tube Inspection Report

Link to Unit 1 Report

5.6.6.2 Unit 2 SG Tube Inspection Report

1. A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 6.19, Steam Generator (SG) Program. The report shall include:

5.5.5.2,

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged or repaired during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged or repaired to date,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing,

h. The effective plugging percentage for all plugging and tube repairs in each SG, and

i. Repair method utilized and the number of tubes repaired by each repair method.

2. A report shall be submitted within 90 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 6.19, Steam Generator Program, when voltage based alternate repair criteria have been applied. The report shall include information described in Section 6.b of Attachment 1 to Generic Letter 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking".

5.5.5.2

~~6.9.7~~ STEAM GENERATOR TUBE INSPECTION REPORT (Continued)

5.6.6.2 Unit 2

3. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the Commission prior to returning the steam generators to service (MODE 4) should any of the following conditions arise:

   a. If circumferential crack-like indications are detected at the tube support plate intersections.

   b. If indications are identified that extend beyond the confines of the tube support plate.

   c. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

4. With respect to tubes where the F* inspection methodology is applied, report the following information to the NRC within 90 days after achieving Mode 4 following the outage in which the F* inspection methodology was applied:

   a. Number of total indications, location of each indication, orientation of each indication, severity of each indication, and whether the indications initiated from the inside or outside surface.

   b. The cumulative number of indications detected in the tubesheet region as a function of elevation within the tubesheet.

   c. The projected end-of-cycle accident-induced leakage from tubesheet indications.

~~6.10 DELETED~~

LA6 → UFSAR

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

5.7

~~6.12~~ HIGH RADIATION AREA

5.7.1

~~6.12.1~~ In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit~~(1)~~. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

Insert Note (1) from next page

5.7 ~~6.12~~ HIGH RADIATION AREA (Continued)

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.

c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by a ~~facility~~ radiation protection supervisor in the Radiological Work Permit.

5.7.2

~~6.12.2~~ ~~The~~ requirements of ~~6.12.1~~, above, ~~also apply to~~ each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr~~. In addition~~, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the shift supervisor on duty ~~and/or~~ a ~~facility~~ radiation protection supervisor.

In addition to the

5.7.1

Insert Note (1) directly into text as marked on previous page.

~~(1)~~ Radiation protection personnel, or personnel escorted by radiation protection personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

TECHNICAL SPECIFICATIONS (TS) BASES CONTROL PROGRAM (Continued)

2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

5.5.10.b.1 and 5.5.10.b.2

d. Proposed changes that meet the criteria of Specification ~~6.18.b.1 & 2~~ above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.5

for Unit 1 and Unit 2

Specification 5.5.5.1 (Unit 1) and Specification 5.5.5.2 (Unit 2) below contain provisions that shall be included in each Unit's Steam Generator Program.

~~6.19~~ STEAM GENERATOR (SG) PROGRAM

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. ~~In addition, the Steam Generator Program shall include the following provisions~~:

5.5.5.1 Unit 1 SG Program

Unit 1 pages follow. LINK

5.5.5.2 Unit 2 SG Program

a. Provisions for Condition Monitoring Assessments

Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging or repair of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected, plugged, or repaired to confirm that the performance criteria are being met.

b. Provisions for Performance Criteria for SG Tube Integrity

SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and, except as permitted through application of the alternate repair criteria discussed

STEAM GENERATOR PROGRAM (Continued)

5.5.5.2

in Specification ~~6.19~~.c.4, a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

5.5.5.2

When alternate repair criteria discussed in Specification ~~6.19~~.c.4 are applied to axially oriented outside diameter stress corrosion cracking at tube support plate locations, the probability of burst of one or more indications under postulated main steam line break conditions shall be less than $1x10^{-2}$.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is also not to exceed 1 gpm per SG, except during a SG tube rupture or for specific types of degradation at specific locations as described in Specification ~~6.19~~.c.4.

5.5.5.2

3. The operational LEAKAGE performance criterion is specified in LCO ~~3.4.6.2~~.

3.4.13

c. Provisions for SG Tube Repair Criteria

5.5.5.2

1. Tubes found by inservice inspection to contain a flaw in a non-sleeved region with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged or repaired except if permitted to remain in service through application of the alternate repair criteria discussed in Specification ~~6.19~~.c.4 or if the region of the tube containing the flaw does not require inspection due to application of the F* criterion as discussed in Specification ~~6.19~~.d. Flaws in the region of the tube that does not require inspection due to application of the F* criterion are acceptable for continued operation.

5.5.5.2

STEAM GENERATOR PROGRAM (Continued)

2. Sleeves found by inservice inspection to contain flaws with a depth equal to or exceeding the following percentages of the nominal sleeve wall thickness shall be plugged:

ABB Combustion Engineering TIG welded sleeves	27%
Westinghouse laser welded sleeves	25%

3. Tubes with a flaw in a sleeve to tube joint that occurs in the sleeve or in the original tube wall of the joint shall be plugged.

5.5.5.2

4. The following alternate tube repair criteria may be applied as an alternative to the 40% depth based criteria of ~~Technical~~ Specification ~~6.19~~.c.1:

Tube Support Plate Voltage-Based Repair Criteria

Tube Support Plate Plugging Limit is used for the disposition of an alloy 600 steam generator tube for continued service that is experiencing predominantly axially oriented outside diameter stress corrosion cracking confined within the thickness of the tube support plates. At tube support plate intersections, the plugging (repair) limit is described below:

a) Steam generator tubes, with degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with bobbin voltages less than or equal to 2.0 volts will be allowed to remain in service.

b) Steam generator tubes, with degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts will be repaired or plugged, except as noted in ~~6.19~~.c.4.c below.

5.5.5.2

c) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts but less than or equal to the upper voltage repair limit (calculated according to the methodology in Generic Letter 95-05 as supplemented) may remain in service if a rotating pancake coil or acceptable alternative inspection does not detect degradation.

STEAM GENERATOR PROGRAM (Continued)

d) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than the upper voltage repair limit (calculated according to the methodology in Generic Letter 95-05 as supplemented) will be plugged or repaired.

e) If an unscheduled mid-cycle inspection is performed, the following mid-cycle repair limits apply instead of the limits specified in ~~6.19~~.c.4.a, ~~6.19~~.c.4.b, ~~6.19~~.c.4.c and ~~6.19~~.c.4.d.

5.5.5.2

The mid-cycle repair limits are determined from the following equations:

$$V_{MURL} = \frac{V_{SL}}{1.0 + NDE + Gr\left(\frac{CL - \Delta t}{CL}\right)}$$

$$V_{MLRL} = V_{MURL} - (V_{URL} - V_{LRL})\left(\frac{CL - \Delta t}{CL}\right)$$

where:

V_{URL} = upper voltage repair limit
V_{LRL} = lower voltage repair limit
V_{MURL} = mid-cycle upper voltage repair limit based on time into cycle
V_{MLRL} = mid-cycle lower voltage repair limit based on V_{MURL} and time into cycle
Δt = length of time since last scheduled inspection during which V_{URL} and V_{LRL} were implemented
CL = cycle length (the time between two scheduled steam generator inspections)
V_{SL} = structural limit voltage
Gr = average growth rate per cycle length
NDE = 95-percent cumulative probability allowance for nondestructive examination uncertainty (i.e., a value of 20-percent has been approved by NRC). The NDE is the value provided by the NRC in GL 95-05 as supplemented.

Implementation of these mid-cycle repair limits should follow the same approach as in Specifications ~~6.19~~.c.4.a through ~~6.19~~.c.4.d.

5.5.5.2

STEAM GENERATOR PROGRAM (Continued)

5. Unsleeved tubes with service-induced degradation identified within the F* distance or within 3.0 inches below the top of the tubesheet, whichever is greater, shall be repaired or plugged upon detection.

6. Tubes with service-induced degradation identified within 3.0 inches below the lower end of a sleeve installed in the tubesheet region shall be plugged upon detection.

d. Provisions for SG Tube Inspections

Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. Within the tubesheet this includes only the portion of the tube within the F* distance or within 3.0 inches below the top of the tubesheet, whichever is greater, unless tube sleeves are installed. When a tube sleeve is installed, the inspection extends to a distance of 3.0 inches below the lower end of the sleeve. The portion of the tube within the tubesheet that may be excluded from inspection is based on WCAP-16385-P, Revision 1, "F* Tube Plugging Criterion for Tubes with Degradation in the Tubesheet Roll Expansion Region of the Beaver Valley Unit 2 Steam Generators." The requirement in Specification ~~6.19~~.d.5 is a condition for implementing the F* criterion. The tube-to-tubesheet weld is not part of the tube. In tubes repaired by sleeving, the portion of the original tube wall between the sleeve's joints is not an area requiring re-inspection. In addition to meeting the requirements of d.1, d.2, d.3, and d.4 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

5.5.5.2

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

STEAM GENERATOR PROGRAM (Continued)

2. Inspect 100% of the tubes at sequential periods of 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. No SG shall operate for more than 24 effective full power months or one interval between refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one interval between refueling outages (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

4. Indications left in service as a result of application of the tube support plate voltage-based repair criteria (~~6.19~~.c.4) shall be inspected by bobbin coil probe during all future refueling outages.

5.5.5.2

Implementation of the steam generator tube-to-tube support plate repair criteria requires a 100-percent bobbin coil inspection for hot-leg and cold-leg tube support plate intersections down to the lowest cold-leg tube support plate with known outside diameter stress corrosion cracking (ODSCC) indications. The determination of the lowest cold-leg tube support plate intersections having ODSCC indications shall be based on the performance of at least a 20-percent random sampling of tubes inspected over their full length.

5. When F* inspection methodology is implemented, 100 percent of the active hot leg tubes shall be examined utilizing qualified eddy current techniques from the top of the tubesheet to the F* distance or to 3.0 inches below the top of the tubesheet, whichever is greater. Sleeved tubes shall be examined to 3.0 inches below the lower end of the sleeve.

e. Provisions for monitoring operational primary to secondary LEAKAGE

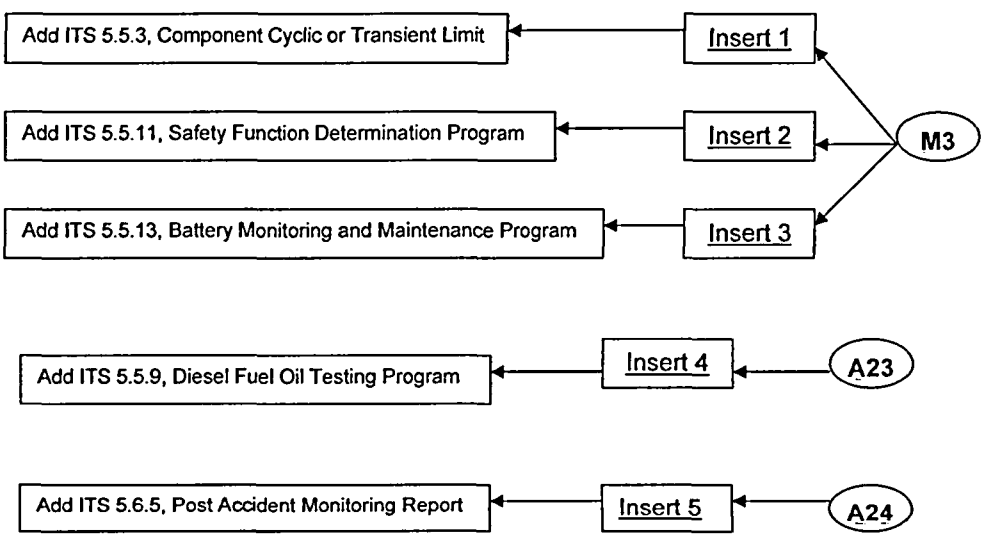
STEAM GENERATOR PROGRAM (Continued)

f. Provisions for SG Tube Repair Methods

Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

1. ABB Combustion Engineering TIG welded sleeves, CEN-629-P, Revision 02 and CEN-629-P Addendum 1.

2. Westinghouse laser welded sleeves, WCAP-13483, Revision 2.



PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (Continued)

The methodology listed in WCAP-14040-NP-A was used with two exceptions:

a) Use of ASME Code Case N-640, "Alternative Reference F... P-T Limits for S...

Changes to this Unit 1 material are addressed in the corresponding Unit 2 marked-up page.

b) Use of methodology of the 1996 version of ASME Section XI, Appendix G, "Fracture Toughness Criteria for Protection Against Failure".

c. The PTLR shall be provided to the NRC upon issuance for each reactor fluence period and for any revision or supplement thereto.

5.6.6.1 Unit 1

~~6.9.7~~ STEAM GENERATOR TUBE INSPECTION REPORT

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification ~~6.19,~~ 5.5.5.1, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged to date,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and

h. The effective plugging percentage for all plugging in each SG.

~~6.10 DELETED~~

6.11 RADIATION PROTECTION PROGRAM

Procedures for ... l be prepared consistent with ... and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

Changes to this Unit 1 material are addressed in the corresponding Unit 2 marked-up page.

Containment Leakage Rate Testing Program (Continued)

b. Air Lock testing acceptance criteria and required action are as stated in Specification 3.6.1.3 titled "Containment Air Locks."

The provisions of Specification 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of Specification 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

6.18 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

Changes to this Unit 1 material are addressed in the corresponding Unit 2 marked-up page.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. a change in the TS incorporated in the license; or

2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 6.18.b.1 & 2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.5.1 Unit 1

~~6.19~~ Steam Generator (SG) Program

~~A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:~~

a. Provisions for Condition Monitoring Assessments

Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the

Steam Generator Program (Continued)

condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged, to confirm that the performance criteria are being met.

b. Provisions for Performance Criteria for SG Tube Integrity

SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is also not to exceed 1 gpm per SG, except during a SG tube rupture.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.~~6.2.~~ 13, "Operational Leakage"

c. Provisions for SG Tube Repair Criteria

Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

Steam Generator Program (Continued)

d. Provisions for SG Tube Inspections

Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

2. Inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. During each period inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three intervals between refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one interval between refueling outages (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE

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These statements are needed to maintain allowances for Surveillance Frequency extensions contained in the ITS since these SRs are not normally applied to frequencies identified in the Administrative Controls Section of the ITS. Since this change is a clarification required to maintain provisions that would be allowed in the LCO sections of the Technical Specifications, it is designated as administrative.

A.15 CTS 4.0.5.d states that performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements. ITS 5.5.4 (Inservice Testing Program) does not include this statement. This changes the CTS by deleting the statement that performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.

This change is acceptable since CTS 4.0.5.d effectively states that all applicable requirements must be met. Repeating this overall requirement as a specific detail is redundant and unnecessary. Therefore, this detail is deleted without any technical change in the requirements and is designated as administrative.

A.16 Not used.

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 3

Database #s: 200510131457
200510131503
200510131504

NRC Reviewer: K. Wood

BSI-24 Withdrawal

Affected BVPS ITS

3.9.4, RHR and Coolant Circulation – High Water Level
3.9.5, RHR and Coolant Circulation – Low Water Level

Description

Beyond Scope Issue (BSI) number 24 proposed the addition of a third LCO note to both ITS 3.9.4, "RHR and Coolant Circulation – High Water Level" and ITS 3.9.5, "RHR and Coolant Circulation – Low Water Level" The proposed Note was based on the allowance in the NUREG-1431 Rev. 3 Bases for the "RHR and Coolant Circulation – Low Water Level Specification that allowed both RHR pumps to be used to drain down the reactor cavity. The NUREG-1431, Rev. 3 Bases contains a statement that allows both RHR pumps to be aligned to the refueling water storage tank to support draining and filling the reactor cavity. The allowance in the ISTS Bases was introduced by TSTF-21. In BSI-24, BVPS proposed LCO Notes in both ITS 3.9.4 and ITS 3.9.5 to support this Bases allowance.

The withdrawal of this BSI results in the deletion of the third LCO Note in ITS 3.9.4 and ITS 3.9.5 and the deletion of the Bases text describing each of these notes. The affected portion of the Bases for ITS 3.9.5 is restored to more closely conform to the NUREG-1431 Bases text which includes the allowance added by TSTF-21 for both RHR pumps to be aligned to the refueling water storage tank.

Affected Pages:

The following Table(s) list the affected pages by type (i.e., ITS markup, CTS markup, etc.). In order to facilitate review by ITS section, a separate table is provided for each ITS section affected by the change. **The page numbers listed are the ITS section specific consecutive numbers found in the lower right corner of each page.**

(continued)

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

Change 3 (continued)

Note: Because the affected page(s) for each change were extracted from a complete ITS section electronic file, the electronic hyperlinks (created in the complete ITS section file) do not work in the collection of affected pages that follow this cover page.

ITS SECTION 3.9 (REFUELING OPERATIONS) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 11, 13, 14, 17**
ITS JFDS	**PAGES: 27, 28, 31, 32**
ITS BASES MARKUPS	**PAGES: 53, 56, 57, 58, 61**
ITS BASES JFDS	**PAGES: 75**
CTS MARKUPS	**PAGES: 88, 89, 91, 92**
CTS DOCS	**PAGES: 124, 125, 135, 136**

3.9 REFUELING OPERATIONS

3.9.5 4 Residual Heat Removal (RHR) and Coolant Circulation – High Water Level

LCO 3.9.5 One RHR loop shall be OPERABLE and in operation.

TSTF-438 removed from s (RCS)

1. -NOTE-

--The required RHR loop may be ~~not in~~ operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause introduction into the Reactor Coolant System, ~~coolant~~ with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

Rev 3 of coolant

2. The required RHR loop may be removed from operation for ≤ 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

APPLICABILITY: MODE 6 with the water level ≥ 23 ft above the top of reactor vessel flange. 1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. *RHR loop requirements* not met.	A.1 *Suspend operations that would cause introduction into the RCS, ~~coolant~~ with boron concentration less than required to meet the boron concentration of LCO 3.9.1.*	*Immediately*
	AND	
	A.2 Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND	
	A.3 Initiate action to satisfy RHR loop requirements.	Immediately
	AND	

of coolant Rev 3

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3.9 REFUELING OPERATIONS

3.9.6 Residual Heat Removal (RHR) and Coolant Circulation – Low Water Level

5

LCO 3.9.6 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

TSTF-438

removed from operation

- NOTES -

1. All RHR pumps may be ~~de-energized~~ for ≤ 15 minutes when switching from one train to another provided:

Rev 3

introduction of coolant into the Reactor Coolant System (RCS) with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1

   a. The core outlet temperature is maintained > 10 degrees F below saturation temperature,

   b. No operations are permitted that would cause ~~a reduction of the Reactor Coolant System boron concentration~~, and

   c. No draining operations to further reduce RCS water volume are permitted.

2. One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status. OR A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately Immediately

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operating and able to provide forced RCS flow for heat removal and prevent thermal and boron stratification.

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Rev. 3, Change 3

BASES

LCO (continued)

b. Mixing of borated coolant to minimize the possibility of criticality, and

c. Indication of reactor coolant temperature.

An OPERABLE RHR loop includes an RHR pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the low-end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

The LCO is modified by a Note that allows the required operating RHR loop to not be in operation for up to 1 hour per 8 hour period, provided no operations are permitted that would dilute the RCS boron concentration introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration of LCO 3.9.1. Boron concentration reduction with coolant at boron concentrations less than required to assure the RCS boron concentration is maintained is prohibited because uniform concentration distribution cannot be ensured without forced circulation. This permits operations such as core mapping or alterations in the vicinity of the reactor vessel hot leg nozzles and RCS to RHR isolation valve testing. During this 1-hour period, decay heat is removed by natural convection to the large mass of water in the refueling cavity.

APPLICABILITY

One RHR loop must be OPERABLE and in operation in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange, to provide decay heat removal. The 23 ft water level was selected because it corresponds to the 23 ft requirement established for fuel movement in LCO 3.9.7, "Refueling Cavity Water Level." Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS), and Section 3.5, Emergency Core Cooling Systems (ECCS). RHR loop requirements in MODE 6 with the water level < 23 ft are located in LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level."

ACTIONS

RHR loop requirements are met by having one RHR loop OPERABLE and in operation, except as permitted in the Note to the LCO.

A.1

If RHR loop requirements are not met, there will be no forced circulation to provide mixing to establish uniform boron concentrations. Suspending positive reactivity additions that could result in failure to meet the

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B 3.9 REFUELING OPERATIONS

B 3.9.6 RHR and Coolant Circulation – Low Water Level

5

BASES

BACKGROUND

The purpose of the RHR System in MODE 6 is to remove decay heat and sensible heat from the Reactor Coolant System (RCS), as required by GDC 34, to provide mixing of borated coolant, and to prevent boron stratification (Ref. 1). Heat is removed from the RCS by circulating reactor coolant through the RHR heat exchangers where the heat is transferred to the Component Cooling Water System. The coolant is then returned to the RCS via the RCS cold leg(s). Operation of the RHR System for normal cooldown decay heat removal is manually accomplished from the control room. The heat removal rate is adjusted by controlling the flow of reactor coolant through the RHR heat exchanger(s) and the bypass lines. Mixing of the reactor coolant is maintained by this continuous circulation of reactor coolant through the RHR System.

APPLICABLE SAFETY ANALYSES

If the reactor coolant temperature is not maintained below 200°F, boiling of the reactor coolant could result. This could lead to a loss of coolant in the reactor vessel. Additionally, boiling of the reactor coolant could lead to a reduction in boron concentration in the coolant due to the boron plating out on components near the areas of the boiling activity. The loss of reactor coolant and the reduction of boron concentration in the reactor coolant will eventually challenge the integrity of the fuel cladding, which is a fission product barrier. Two trains of the RHR System are required to be OPERABLE, and one train in operation, in order to prevent this challenge.

The RHR System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

LCO

In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, both RHR loops must be OPERABLE. Additionally, one loop of RHR must be in operation in order to provide:

a. Removal of decay heat,

b. Mixing of borated coolant to minimize the possibility of criticality, and

c. Indication of reactor coolant temperature.

TSTF-21

two Notes. Note 1

TSTF-438

removed from operation

This LCO is modified by ~~a Note that~~ permits the RHR pumps to be ~~de-energized~~ for ≤ 15 minutes when switching from one train to another.

BASES

LCO (continued)

TSTF-21

Note 2

1

when the testing results in the required RHR loop being rendered inoperable. The remaining OPERABLE RHR loop is adequate to provide the required cooling during the time allowed by Note 2.

TSTF-21 & NUREG 1431, Rev. 3

INSERT

The circumstances for stopping both RHR pumps are to be limited to situations when the outage time is short [and the core outlet temperature is maintained > 10 degrees F below saturation temperature]. The Note prohibits boron dilution or draining operations when RHR forced flow is stopped.

~~This LCO is modified by a Note that~~ allows one RHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. Prior to declaring the loop inoperable, consideration should be given to the existing plant configuration. This consideration should include that the core time to boil is short, there is no draining operation to further reduce RCS water level and that the capability exists to inject borated water into the reactor vessel. This permits surveillance tests to be performed ~~on the inoperable loop during a time when these tests are safe and possible~~.

RCS

normal recirculation

An OPERABLE RHR loop consists of an RHR pump, a heat exchanger, valves, piping, instruments and controls to ensure an OPERABLE flow path and to determine the ~~low end~~ temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two RHR loops are required to be OPERABLE, and one RHR loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS)~~, and Section 3.5, Emergency Core Cooling Systems (ECCS)~~. RHR loop requirements in MODE 6 with the water level ≥ 23 ft are located in LCO 3.9.~~5~~, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level."

4

ACTIONS

A.1 and A.2

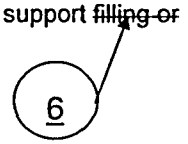
If less than the required number of RHR loops are OPERABLE, action shall be immediately initiated and continued until the RHR loop is restored to OPERABLE status and to operation or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is ≥ 23 ft above the reactor vessel flange, the Applicability changes to that of LCO 3.9.~~5~~, and only one RHR loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

4

Rev. 3, Change 3

INSERT ITS 3.9.5 BASES ADDITION (FROM TSTF-21 & NUREG1431, Rev. 3)

Both RHR pumps may be aligned to the Refueling Water Storage Tank to support ~~filling or~~ draining the refueling cavity or for performance of required testing.



Appendix A, General Design Criteria (GDC). The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC.

6. The ISTS Bases text added by TSTF-21 (and which was incorporated into NUREG-1431, Rev. 3) is revised to be consistent with the BVPS design. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally only used for draining the cavity (not filling). Therefore, the Bases text was revised to eliminate the option for filling the cavity.

Rev. 3, Change 3

ITS 3.9.4

A1 - High Water Level

A2

REFUELING OPERATIONS

~~3/4.9.8~~ RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

LCO 3.9.4

LIMITING CONDITION FOR OPERATION

~~3.9.8.1~~ ~~At least~~ one residual heat removal (RHR) loop shall be OPERABLE and in operation.

LCO Notes

with the water level ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: MODE 6.

ACTION:

Replace with Action A.2 (A3)

L1 Replace with Action A.1

M1 Add Action A.3

A4 Replace with Actions A.4, A.5 and A.6.1

~~a.~~ With less than one residual heat removal loop in operation, ~~except as provided below, suspend all operations involving~~ an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.

Add Action A.6.2

Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

L2

~~b.~~ The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

LA1

Bases

A5

~~c.~~ The residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles ~~provided there is at least 23 feet of water above the top of the reactor vessel flange.~~

A6

A7

M2

~~d. The provisions of Specification 3.0.3 are not applicable.~~

SR 3.9.4.1

, provided no operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

SURVEILLANCE REQUIREMENTS

LA3

~~4.9.8.1~~ Verify ~~at least~~ one residual heat removal loop is in operation ~~and circulating reactor coolant at:~~

every 12 hours

M3

L3

a. ~~A flow rate ≥ 1000 gpm twice per shift when the Reactor Coolant System is in a reduced inventory condition*.~~

b. A flow rate ≥ 3000 gpm prior to the start of and once per hour during a reduction in the Reactor Coolant System boron concentration.

Moved to LRM

LA2

~~* The reactor coolant system water level is lower than three feet below the reactor vessel flange.~~

ITS 3.9.4 ACTION INSERTS

A.1	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1 immediately, and
A.2	Suspend loading irradiated fuel assemblies in the core immediately, and
A.3	Initiate action to satisfy RHR loop requirements immediately, and
A.4	Close equipment hatch and secure with 4 bolts in 4 hours, and
A.5	Close one door in each airlock in 4 hours, and
A.6.1	Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange or equivalent in 4 hours, or
A.6.2	Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System in 4 hours.

ITS 3.9.5

Rev. 3, Change 3

A1

A.2

REFUELING OPERATIONS

RHR and Coolant Circulation -

LOW WATER LEVEL

L1

and one RHR loop shall be in operation

LCO 3.9.5

Insert LCO Notes 1 & 2

LIMITING CONDITION FOR OPERATION

~~3.9.8.2~~ Two Residual Heat Removal (RHR) loops shall be OPERABLE.*

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is less than 23 feet.

ACTION:

immediately

OR A.2 Initiate action to establish ≥ 23 ft of water above the top of the reactor vessel flange immediately.

Action A.1

~~a.~~ With less than the required RHR loops OPERABLE, ~~immediately~~ initiate corrective action to return the required RHR loops to OPERABLE status ~~as soon as possible~~.

A3

~~b. The provisions of Specification 3.0.3 are not applicable.~~

A4

Insert Condition B "No RHR Loop in operation" and Actions B.1 through B.5.1

Insert Action B.5.2

L3

SURVEILLANCE REQUIREMENTS

A2

L2

~~4.9.8.2 The required Residual Heat Removal loops shall be determined OPERABLE per specification 4.0.5.~~

SR 3.9.5.1 Verify one RHR loop is in operation every 12 hours.

A2

M1

NOTE

Not required to be performed until 24 hours after the required pump is not in operation.

SR 3.9.5.2 Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation every 7 days.

~~*The normal or emergency power source may be inoperable for each RHR loop.~~

A5

NOTES MODIFYING ITS LCO 3.9.5

- NOTES –

1. All RHR pumps may be removed from operation for ≤15 minutes when switching from one train to another provided:
   a. The core outlet temperature is maintained > 10 degrees F below saturation temperature,
   b. No operations are permitted that would cause introduction of coolant into the Reactor Coolant System (RCS) with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1, and
   c. No draining operations to further reduce RCS water volume are permitted.

2. One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.

ITS 3.9.5 Condition B Actions

B.1	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1 immediately, and
B.2	Initiate action to restore one RHR loop to operation immediately, and
B.3	Close equipment hatch and secure with 4 bolts in 4 hours, and
B.4	Close one door in each airlock in 4 hours, and
B.5.1	Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange or equivalent in 4 hours, or
B.5.2	Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System in 4 hours.

provides adequate assurance that the LCO requirements continue to be met. Thus, appropriate verifications continue to be performed in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 Not used.

More Restrictive Changes (M)

M.1 The CTS 3.9.8.1 actions applicable with less than one RHR loop in operation are revised consistent with the corresponding ISTS Actions by the addition of a new requirement to initiate action to satisfy the RHR loop requirements. In addition, the nonspecific completion time for the CTS Actions to "suspend operations involving..." is revised by the addition of an immediate completion time for these CTS Actions, also consistent with the ISTS.

The new action to immediately initiate action to restore the RHR to the required status is consistent with good operating practice in the event RHR is lost and

radioactive release. Although not specified as an Action in the TS, the BVPS purge exhaust may also be lined up to the filtration system in the Supplemental Leak Collection and Release System (SLCRS) which could provide a defense in depth capability to mitigate any release.

The proposed change only allows for a delay in isolating the containment purge and exhaust system. This delay may be necessary for continued habitability of the containment and restoration of RHR (BVPS RHR pumps are inside containment). As such, the proposed change continues to provide adequate assurance that the containment will be closed and that the release of radioactive material would be minimized should boiling occur in the core. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.4 Not used.

More Restrictive Changes (M)

M.1 CTS 3.9.8.2 requires two independent RHR loops to be OPERABLE and at least one loop to be in operation. The corresponding ISTS specifies a surveillance that requires verification every seven days of correct breaker alignment and indicated power available to the RHR pump not in operation. The CTS does not have a corresponding surveillance. The CTS is revised to adopt the ITS SR 3.9.5.2 for the standby RHR pump. This changes the CTS by adding a new Surveillance Requirement.

The ISTS LCO requires one RHR loop to be in operation and one RHR loop to be held in readiness should it be needed. The addition of the new surveillance compliments the ISTS LCO requirement by providing a corresponding surveillance for the standby RHR pump. The proposed change is acceptable because it provides additional assurance that the standby RHR loop will be ready should it be needed.

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REVISION 3

CHANGE 4

Description

This change includes various editorial corrections and other minor changes to the ITS, CTS markups, DOCs, JFDs and the ITS Bases to enhance, clarify, or make the text more BVPS specific or consistent with the ISTS writers guide. As the following changes encompass various ITS Sections, the changes are further subdivided into individual changes 4A through 4S to improve the clarity and presentation of each change. As such, each change (4A-4S) is provided with a separate cover page that includes a description of the change and a list of affected pages.

Affected Pages:

The affected pages are identified on the individual cover pages provided for each change (4A-4S). **The affected page numbers listed for each change are the ITS section specific consecutive numbers found in the lower right corner of each page.**

Note: The blue hyperlink markups in the electronic version of Revision 3 do not work.

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REVISION 3

CHANGE 4A

Affected BVPS ITS

3.3.3, Post Accident Monitoring Instrumentation

Description

In ITS 3.3.3, Required Action D.1 the period prior to numeral 1 in "Table 3.3.3.1" is replaced with a dash. Required Action D.1 refers to an ITS Table. The ITS Table format uses a dash before the last digit(s) that identify the Table number not a period.

Affected Pages

ITS Markup – Page 5

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

NOTE
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.7	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3-1 for the ~~channel~~.	Immediately

or more

all but

5

1

2

Function

3

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REVISION 3

CHANGE 4B

Affected BVPS ITS

3.4.11, Pressurizer Power Operated Relief Valves (Bases change only)

Description

The Bases for ITS 3.4.11, Background Section contains a description of each BVPS Unit's Power Operated Relief Valves (PORVs). The Bases description of the Unit 1 PORV power supplies is revised to improve consistency with the BVPS Unit 1 design.

Affected Pages

Bases Markup – Page 147

INSERTS for ISTS 3.4.11 BASES

1. Unit 1 has three air-operated DC powered PORVs. Each PORV is provided with a separate nitrogen backup supply in addition to the normal air supply. Two of the three PORVs are powered from separate trains of DC power. The associated block valves are powered from 480 VAC 1E power supplies. Two of the three block valves are powered from separate trains of AC Power.

   Unit 2 has three solenoid-operated DC powered PORVs. Two of the three PORVs are powered from separate trains of DC power. The associated block valves are powered from 480 VAC 1E power supplies. Two of the three block valves are powered from separate trains of AC Power such that each PORV and associated block valve are powered from the same train (Ref. 1).

2. With only one PORV inoperable and not capable of being manually cycled and Required Actions B.1 and B.2 met, operation may continue until the next refueling outage (MODE 6) when the inoperable PORV can be repaired. Continued operation is acceptable because the two remaining PORVs are OPERABLE and provide two flow paths for RCS pressure control.

   In addition to the isolation requirements described above, Required Action B.3 requires that one PORV be restored to OPERABLE status in 72 hours. The Required Action is modified by a Note that specifies that Required Action B.3 is only applicable if two PORVs are inoperable. With two of the three PORVs inoperable, one PORV must be restored to OPERABLE status or capable of being manually cycled in order to assure redundant PORV flow paths are available. The Completion Time of 72 hours to restore the required PORV to OPERABLE status or capable of being manually cycled is reasonable because one PORV remains OPERABLE during this time. If the required PORV cannot be restored within this additional time, the plant must be brought to a MODE in which the LCO does not apply, as required by Condition D.

3. If one PORV block valve is inoperable, either the block valve must be closed or the associated PORV placed in manual control in one hour. If the block valve is closed, it is accomplishing the prime functional requirement (to isolate the associated PORV to prevent an inadvertent RCS depressurization). In this case, operation may continue until the next refueling outage (MODE 6) when the inoperable block valve can be repaired. Continued operation is acceptable because the two remaining block valves and PORVs are OPERABLE and provide two flow paths for RCS pressure control.

   If the inoperable block valve can not be closed, it is incapable of performing the prime functional requirement of isolating an inoperable PORV to prevent an inadvertent RCS depressurization.

4. If more than one block valve is inoperable, Required Action F.1 requires that the associated PORVs be placed in manual control within one hour. Placing the PORVs in manual control precludes automatic opening for an overpressure event and avoids the potential for a stuck open PORV at a time that the block valve(s) are inoperable.

   Required Action F.2 requires one block valve to be restored to OPERABLE status within 2 hours. The Required Action is modified by a Note that specifies Required Action F.2 is

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REVISION 3

CHANGE 4C

Affected BVPS ITS

3.1.6, Control Bank Insertion Limits, SR 3.1.6.1 (Bases change only)

Description

ITS SR 3.1.6.1 refers to the limits specified in the Core Operating Limits Report (COLR). The Bases description of the SR is revised to clarify that the specific COLR limits referred to in the SR 3.1.6.1 are the control bank insertion limits.

Affected Pages

Bases Markup – Page 84

Bases JFD – Page 126

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.6.1

4

The required insertion limits are specified in the COLR.

This Surveillance is required to ensure that the reactor does not achieve criticality with the control banks below their insertion limits.

Insert 1

3

The estimated critical position (ECP) depends upon a number of factors, one of which is xenon concentration. If the ECP was calculated long before criticality, xenon concentration could change to make the ECP substantially in error. Conversely, determining the ECP immediately before criticality could be an unnecessary burden. There are a number of unit parameters requiring operator attention at that point. Performing the ECP calculation within 4 hours prior to criticality avoids a large error from changes in xenon concentration, but allows the operator some flexibility to schedule the ECP calculation with other startup activities.

SR 3.1.6.2

Verification of the control bank insertion limits at a Frequency of 12 hours is sufficient to detect control banks that may be approaching the insertion limits since, normally, very little rod motion occurs in 12 hours.

Insert 2

3

Insert 3

SR 3.1.6.3

When control banks are maintained within their insertion limits as checked by SR 3.1.6.2 above, it is unlikely that their sequence and overlap will not be in accordance with requirements provided in the COLR. A Frequency of 12 hours is consistent with the insertion limit check above in SR 3.1.6.2.

1

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 10, GDC 26, GDC 28.~~

U

2. 10 CFR 50.46.

Unit 2

3. ~~FSAR, Chapter [15].~~

Chapter 14 (Unit 1) and

4. ~~FSAR, Chapter [15].~~
5. ~~FSAR, Chapter [15].~~

Unit 1 UFSAR Appendix 1A, "1971 AEC General Design Criteria Conformance" and Unit 2 UFSAR Section 3.1, "Conformance with U. S. Nuclear Regulatory Commission General Design Criteria

4. UFSAR, Section 3.3.2.6 (Unit 1) and Section 4.3.2.5 (Unit 2).
5. UFSAR, Section 3.3.2.5 (Unit 1) and Section 4.3.2.4 (Unit 2).

ITS 3.1.6 Control Bank Insertion Limits Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. BVPS Unit 1 has been designed and constructed to comply with the General Design Criteria for Nuclear Power Plant Construction" published in July, 1967 by the AEC. BVPS Unit 2 was designed and constructed to be in compliance with 10 CFR 50, Appendix A, General Design Criteria (GDC). The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC.

2. The bases discussion regarding control rod overlap and example figure B 3.1.6-1 is revised to more clearly describe overlap and the tip-to-tip relationship between control banks shown in the BVPS specific example figure. The proposed change is not intended to introduce a technical change to the bases.

3. The Bases for the Control Bank Insertion Limit surveillances (verification of ECP, bank insertion limits, and sequence and overlap limits) are revised by the addition of a clarification. The proposed change provides additional guidance for determining that the requirements of the surveillances are met. The added guidance to verify the required Bank position primarily with the associated group demand position indication and to explain that individual rod position variation is acceptable is consistent with current practice and the various LCOs for individual rod position indication. The bases addition also references the appropriate specifications for individual rod position indication. The inclusion of this guidance is acceptable because the alignment limit and rod position indication specifications referenced by the bases addition contain the appropriate limits and Actions for individual rod positions. These LCOs limit the number of individual rods that may be outside the limits and provide the appropriate remedial or corrective Actions and time constraints on plant operation. The Actions for individual rods not within the required limits include verification and restoration of required SDM and limit plant operation with more than one rod not within the alignment limits to 1 hour. The Control Bank Insertion Limit LCO Actions allow operation to continue for up to 2 hours without meeting the insertion, sequence or overlap requirements. As such, the reliance on the LCO requirements for individual rods results in appropriately conservative Actions being applied. The added clarification is also consistent with the ISTS LCO 3.1.7 bases for the individual rod position indication system. The bases for the LCO requirements that pertain to the individual rod position indication system states that with the individual position indication within the required limits (± 12 steps of demand position) the demand position can be used for indication of bank position. The proposed bases addition is considered a clarification to help the TS user understand the relationship between the different rod position indication requirements.

4. The description of SR 3.1.6.1 is revised to more clearly identify which COLR limits the SR is referring to. The insertion limits are the applicable limits specified in the COLR for this SR.

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CHANGE 4D

Affected BVPS ITS

3.3.3 Post Accident Monitoring Instrumentation, (JFD change only)

Description

ITS 3.3.3, JFD # 5, part B, addresses the Unit 2 RCS Subcooling Margin Monitor. The JFD was enhanced with an additional statement regarding the procedures available to the operators to assist in calculating subcooling margin based on RCS pressure and temperature.

Affected Pages

ITS JFD – Page 32

sump indication does not fulfill the necessary PAM Function. Therefore, the narrow range containment sump level indication is not required in the PAM TS to assure the necessary post accident monitoring information is available in the control room.

B. Unit 2 RCS Subcooling Margin Monitor is not included in the proposed PAM TS. This Unit 2 variable was classified as a Type A and Category 2 variable in the Unit 2 Regulatory Guide 1.97 Report. Unit 1 classified the RCS subcooling monitor as monitoring a Regulatory Guide 1.97 Type B, Category 2 variable.

The RCS subcooling indication provides information to the control room operators related to satisfying one of the SI termination criteria following a design basis accident. The inputs to the RCS subcooling monitor are the core exit thermocouples for RCS temperature and the wide range RCS pressure indication for RCS pressure. Since both of these indications are independently available in the control room and are also included in proposed BVPS PAM ITS, the RCS subcooling monitor only provides a verification of these other primary indications. The backup nature of the Unit 2 Subcooling Margin Monitor indication is identified in UFSAR (Table 7.5.4). In addition, the RCS hot leg temperature indication and RCS cold leg temperature indication are included in the BVPS PAM ITS. The RCS hot leg temperature indication can also be used to verify adequate core cooling, RCS subcooling, and in conjunction with the RCS cold leg temperature indication, the effectiveness of RCS heat removal by the secondary system. The RCS pressure and temperature variables were classified as Regulatory Guide 1.97 Type A and Category 1.

Considering the variety of RCS temperature indications and the RCS pressure indication included in the proposed BVPS PAM ITS and that the RCS Subcooling Margin Monitor is clearly identified as a backup indication in the Unit 2 UFSAR, the inclusion of the RCS Subcooling Margin Monitor is unnecessary to assure the ability to determine adequate core cooling. The RCS temperature and pressure indications required operable in the proposed BVPS PAM ITS provide sufficient assurance that RCS subcooling can be determined. BVPS currently has adequate procedures in place to assist the operators with subcooling margin calculations based on the PAM indications for reactor coolant pressure and temperature. In addition, since the RCS Subcooling Margin Monitor is specified in the Unit 2 CTS PAM, it will be relocated from the TS to the Licensing Requirements Manual (LRM). The LRM contains other BVPS relocated TS and provides a more appropriate level of control for a backup PAM indication. The relocation of this Unit 2 requirement also serves to make the Unit 1 and Unit 2 PAM ITS requirements the same.

Considering the primary inputs to the RCS subcooling monitor are the core exit thermocouples for RCS temperature and the wide range RCS pressure indication for RCS pressure and that both of these indications are included in proposed BVPS PAM ITS, the RCS subcooling monitor is not required to fulfill the necessary PAM Function. Therefore, the RCS subcooling monitor is not required in the PAM TS to assure the necessary post accident monitoring information is available in the control room.

C. Unit 2 Secondary System Radiation (Main Steam Discharge Radiation Monitors)

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REVISION 3

CHANGE 4E

Affected BVPS ITS

3.8.1, AC Sources-Operating, Bases JFD # 13 (JFD change only)

Description

The JFD was revised to delete a reference to the NRC requesting this Bases change. BVPS evaluated the change and found it to improve the Bases without affecting the requirements of the ITS.

Affected Pages

Bases JFD – Page 163

12. A statement is added to the Surveillance Requirement section of the Bases to indicate the loading requirements for the DGs specified in various SRs are indicated kW and power factor values. This change is acceptable because these values reflect a range of kW values produced by the DG. The kW values are based on manufacturer limitations (listed in the UFSAR) or the accident analysis assumption for loads of the DG. The power factor value is intended to simulate the accident loading conditions of the DG. Any indication uncertainties associated with these values are not critical to adequately demonstrate the ability of the DG to accept the required loading at the expected power factor.

13 The Bases for ITS SR 3.8.1.8 and ITS SR 3.8.1.10 discuss the conditions under which the power factor requirement of the SRs may not be met. These discussions are revised to delete the statements that imply the DGs can raise the grid voltage.

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CHANGE 4F

Affected BVPS ITS

3.8.1, AC Sources-Operating, DOC LA.8 (DOC change only)

Description

This DOC is revised to relocate the affected CTS requirement to the LRM. Previously this DOC relocated the affected CTS requirement to the UFSAR. However, the requirement is more in the nature of a surveillance. Therefore, the affected requirement would better fit in the BVPS Licensing Requirements Manual (LRM) than in the UFSAR. Changes to both the UFSAR and the LRM are required to be controlled by the 10 CFR 50.59 process. Therefore, this change remains acceptable as the method for controlling the relocated material is not changed.

Affected Pages

CTS DOC – Pages 232 & 233

changes the CTS by moving the CTS notes from the specification to ITS Bases in the appropriate SR section.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements to start (both normal and emergency) and supply the necessary ranges for voltage, frequency, and power to the emergency bus to support the required safety features. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.7 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.1.1.2.b.2 has a note that modify the requirement. The surveillance verified the generator capability to withstand a load rejection of a specific value without tripping or exceeding a specific frequency. The frequency limit is modified by note 7. The note states that the value for frequency is decreased to account for measurement uncertainties. ITS SR 3.8.1.8 requires the verification of each DG capability to reject a specific load without the frequency exceeding a specific frequency. This changes the CTS by moving the CTS note that states that the frequency is reduced to account for measurement uncertainties from the specification to ITS Bases in the appropriate SR section.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for the DG to be capable of rejecting a specified load while maintaining a specific frequency limit. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.8 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS surveillance requirement 4.8.1.1.2.b.6 states that every 18 months during shutdown each diesel will be verified that the auto-connected loads do not exceed the 2000 hour rating of the machine. ITS LCO 3.8.1 SRs do not include this requirement. This changes the CTS by moving the requirement from specification to the Licensing Requirements Manual (LRM).

The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements to ensure each DG can be started

and loaded to the values assumed by the safety analysis for a design basis event. The remaining ITS SRs include: the capability of offsite sources, DG starting and loading, DG fuel oil (inventory, quality, and transfer capability), DG capability of rejecting load, the ability to prevent tripping of the DG on specified automatic trips with an emergency start signal present, and the OPERABILITY of the sequenced load blocks. These requirements continue to ensure AC sources OPERABILITY and provide assurance protection of the public health and safety with the DGs capability to adequately support ESF systems that mitigate design basis accidents. Also, this change is acceptable because these types of procedural details will be adequately controlled in the LRM. Any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.9 Not used.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* Unit 2 only. Unit 2 CTS surveillance requirement 4.8.1.1.2.g states at least once per 10 years each main fuel oil storage tank will be drained, the accumulated sediment will be removed, and the tank cleaned using a sodium hypochlorite solution or other appropriate cleaning solution. ITS SRs for 3.8.3 do not contain this requirement. This changes the CTS by moving the tank-cleaning requirement for Unit 2 from the specification to the Licensing Requirements Manual (LRM).

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to monitor storage tank for water accumulation every 92 days and verifies fuel oil properties in accordance with the fuel oil testing program on a periodic basis. These SRs ensure the DG fuel oil remains capable of supporting the DGs and their safety functions, which will continue to assure the protection of the public health and safety. Also, this change is acceptable because these types of procedural details will be adequately controlled in the LRM. The LRM is incorporated by reference into the UFSAR and any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.11 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS Actions Note 1 refers to CTS surveillance requirement 4.8.1.1.2.d and 4.8.1.1.2.e for the testing requirements for stored and new fuel oil, including the specific testing standards. This Note appears three times in the CTS as it is used for the different DG Actions. However, the corresponding ITS SR 3.8.3.3, that addresses fuel oil properties, requires new and stored fuel oil be tested and maintained within the limits of, and performed at a frequency in accordance with the Diesel Fuel Oil Testing Program. The ITS program in turn requires testing of diesel fuel oil in accordance with the applicable industry standards, but does not specify the same level of procedural detail for each required test as the CTS surveillances. As such, the applicable limits are retained in the ITS SR 3.8.3.3 Bases. This changes the CTS by

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CHANGE 4G

Affected BVPS ITS

3.8.9, Distribution Systems – Operating, Bases for Action Condition A (Bases change only)

Description

ITS 3.8.9 Action Condition A addresses inoperable distribution subsystems. The Action Condition Bases is revised to be more concise and consistent with the BVPS electrical system. The affected portion of the Bases describing the worst case scenario (i.e., the loss of all AC to an entire train) also lists all the possible power sources for the train. This list is not complete for BVPS and instead of expanding the list of power sources, the list was deleted and the text revised to simply state that in the worst case scenario the Action Condition addresses a de-energized train of AC power. The list of potential AC power sources is discussed in detail in the Bases for ITS 3.8.1, "AC Power Sources" and need not be repeated in this Bases.

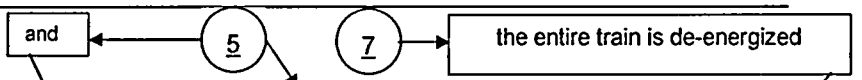
Affected Pages

Bases Markup – Page 150

Bases JFD – Page 171

BASES

ACTIONS (continued)



buses, load centers~~, motor control centers, and distribution panels~~ must be restored to OPERABLE status within 8 hours.

Condition A worst scenario is one train without AC power (i.e., ~~no offsite power to the train and the associated DG inoperable~~). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit and

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 2 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the AC distribution system. At this time, a DC circuit could again become inoperable, and AC distribution restored OPERABLE. This could continue indefinitely.

The Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition A was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC trains made inoperable by inoperable power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability

ITS 3.8.9 Distribution Systems – Operating Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
2. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
3. Editorial change made to be consistent with the ISTS writers' guide.
4. Specific bus nomenclature is moved from the CTS requirements to the Bases.
5. Changes are made to reflect specific listings in ITS 3.8.9 – 1 Table.
6. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
7. Editorial change made to limit unnecessary detail such as the list of potential AC sources that is already described in detail in the Bases for ITS 3.8.1, "AC Sources – Operating."

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CHANGE 4H

Affected BVPS ITS

3.8.1, AC Sources-Operating, Action Condition F, indent position of logical connector AND

Description

This change affects an insert page used in the markup of ITS 3.8.1, Action Condition F. The AND logical connector between Actions F.1.1 and F.1.2 on the insert page should be indented more between these Actions. This change is necessary to meet the ISTS format requirements for logical connectors and to ensure the marked-up ITS pages match the final typed pages. The change indents the logical connector to the correct position between the two Actions.

Affected Pages

ITS Markup – Page 20

Rev. 3, Change 4H

Inserts for ITS LCO 3.8.1

Insert Condition F

Condition		Required Action	Completion Time
- NOTE - Separate Condition entry is allowed for each sequence timer. F. One or more required sequence timer(s) inoperable.	F.1.1	Place the component(s) with the inoperable sequence timer(s) in a condition where it can not be automatically loaded to associated emergency bus. AND	Immediately
	F.1.2	Enter appropriate Condition and Required Actions for any component that can not be automatically loaded to associated emergency bus. OR	Immediately
	F.2	Declare the associated DG inoperable.	Immediately

Insert SR 3.8.1.4.1 and SR 3.8.1.4.2

SURVEILLANCE		FREQUENCY
SR 3.8.1.4.1	- Note - Only applicable to Unit 1. Verify each DG's day and engine mounted tanks contain a combined total of ≥ 900 gal of fuel oil.	31 days
SR 3.8.1.4.2	- Note - Only applicable to Unit 2. Verify each DG's day tank contains ≥ 350 gal of fuel oil.	31 days

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REVISION 3

CHANGE 4I

Affected BVPS ITS

3.7.14, Spent Fuel Pool Storage Bases, (Bases change only)

Description

This change corrects mislabeled references and ITS LCO #s in the Bases. In addition this change makes the Bases statements regarding Keff without crediting boron consistent through the bases (i.e., without crediting boron Keff can only be maintained < 1.0 and with credit for boron Keff can be maintained ≤ 0.95). In some instances, the bases previously stated that Keff can only be maintained ≤ 1.0 without crediting boron. These instances are revised to < 1.0 consistent with the applicable safety analyses. Note the revised text describes the affect of boron in the spent fuel pool but does not affect the requirements of ITS 3.7.14 which addresses fuel assembly locations in the spent fuel pool. ITS LCO 3.7.16, Fuel Storage Pool Boron Concentration, addresses the requirements for boron concentration in the spent fuel pool and is unaffected by this change.

Affected Pages

Bases Markup – Pages 190 & 191

Rev. 3, Change 4I

INSERTS FOR ITS 3.7.14 BASES

Spent Fuel Pool Storage

INSERT 1: BVPS Specific Background Section

The spent fuel storage racks contain storage locations for 1627 fuel assemblies (Unit 1) and 1088 fuel assemblies (Unit 2). The racks are designed to store Westinghouse 17X17 fuel assemblies with nominal enrichment up to 5.0 weight percent. The spent fuel storage racks are divided into three regions with different fuel burnup-enrichment limits associated with each region. Fuel assemblies may be stored in any location provided the fuel burnup-enrichment combinations are within the limits specified for the associated storage rack region in the accompanying LCO.

For Unit 1, the spent fuel storage racks are constructed, in part, from a boron carbide and aluminum-composite material with the trade name "Boral." The Boral material provides a neutron absorbing function to maintain the stored fuel in a subcritical condition. Therefore, soluble boron is not required in the Unit 1 spent fuel pool to maintain the spent fuel rack multiplication factor, k_{eff} , ≤ 0.95 when the fuel assemblies are stored in the correct fuel pool location in accordance with the accompanying LCO and no fuel movement is in progress (i.e., the pool is in a static condition). The fact that soluble boron concentration is not required to maintain the Unit 1 spent fuel rack multiplication factor, k_{eff} , ≤ 0.95 is confirmed in Holtec Report HI-92791(Ref. 1). However, a boron concentration is maintained in the Unit 1 spent fuel pool to provide negative reactivity for postulated accident conditions (i.e., a misplaced fuel assembly resulting from fuel movement) consistent with the guidelines of ANSI 16.1-1975 (Ref. 2) and the April 1978 NRC letter (Ref. 3). The required Unit 1 spent fuel pool boron concentration for a reactivity excursion due to accident conditions is 1050 ppm.

Safe operation of the Unit 1spent fuel pool with no movement of assemblies may therefore be achieved (without reliance on soluble boron) by controlling the location of each stored fuel assembly in accordance with the accompanying LCO.

For Unit 2, spent fuel racks have been analyzed in accordance with the methodology contained in WCAP-14416-NP-A (Ref. 4), as supplemented by Westinghouse Electric Company letter, FENOC-00-110 (Ref. 5). This methodology ensures the spent fuel rack multiplication factor, k_{eff} is ≤ 0.95, as recommended by the April 1978 NRC letter (Ref. 3) and ANSI/ANS-57.2-1983 (Ref. 6). The codes, methods, and techniques contained in the methodology are used to satisfy this k_{eff} criterion.

The Unit 2 spent fuel storage racks are analyzed utilizing credit for checkerboard configurations, burnup, and soluble boron, to ensure k_{eff} is maintained ≤ 0.95, including uncertainties, tolerances, and accident conditions. The Unit 2 spent fuel pool k_{eff} can only be maintained < 1.0 without crediting soluble boron.

Therefore, the safe operation of the Unit 2 spent fuel pool with no movement of assemblies necessitates both the storage requirements of the accompanying LCO as well as the fuel pool boron concentration requirements of LCO 3.7.16 be met.

INSERT 2: BVPS Specific Unit 2 Safety Analysis Section

For Unit 2, however, when no potential for an accident exists, safe operation of the spent fuel storage pool must include the boron concentration within the limit specified in LCO 3.7.16 as well as the fuel being stored in accordance with the accompanying LCO. The boron concentration specified in LCO 3.7.16 as well as the storage location requirements of the accompanying LCO are necessary to meet the requirement to maintain $k_{eff} \leq 0.95$ in the Unit 2 spent fuel pool under normal (i.e., static) conditions. Operation within the storage location requirements of the accompanying LCO with no soluble boron in the Unit 2 spent fuel pool would only maintain $k_{eff} < 1.0$.

INSERT 3: BVPS Specific Unit 2 LCO Section

For Unit 2, operation within the storage location requirements specified in Table 3.7.14-1B of the accompanying LCO with no soluble boron in the spent fuel storage pool would only maintain $k_{eff} < 1.0$. Therefore, Unit 2 must also maintain the spent fuel storage pool boron concentration within the limit specified in LCO 3.7.16 as well as the storage location requirements of the accompanying LCO in order to meet the requirement to maintain $k_{eff} \leq 0.95$.

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CHANGE 4J

Affected BVPS ITS

3.8.4, DC Sources – Operating (Bases change only)

Description

ITS 3.8.4 Bases contains a description of the Unit 2 Battery changers. The bases description of the Unit 2 Battery changers is revised to more accurately reflect the available spare battery changers (2-7 and 2-9) consistent with Unit 2 License Amendment Request (LAR) 202, Station Battery Charger Upgrade. This Unit 2 LAR addresses the battery charger upgrade which provides an additional spare charger. The LAR is scheduled to be approved prior to the ITS conversion LAR.

Affected Pages

Bases Markup – Page 124

3.8.4 BASES INSERTS

1. For Unit 1, the required battery banks are Banks 1-1 and 1-3 on the orange bus and Banks 1-2 and 1-4 on the purple bus. The Unit 1 battery chargers are designated 1-1 and 1-3 on the orange bus and 1-2 and 1-4 on the purple bus. The required Unit 2 battery banks are Banks 2-1 and 2-3 on the orange bus and Banks 2-2 and 2-4 on the purple bus. The Unit 2 battery chargers are designated 2-1 and 2-3 on the orange bus and 2-2 and 2-4 on the purple bus. In addition, for Unit 2, spare chargers (2–7 and 2-9) are also provided. The spare changers are equivalent to the primary battery chargers. The spare chargers may be substituted for an inoperable charger or charger removed from service for maintenance. One safety switch is provided for each DC bus to provide a backup method for battery charging and bus supply if the primary charger is out of service. This is discussed in the UFSAR, Chapter 8 (Ref 4).

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REVISION 3

CHANGE 4K

Affected BVPS ITS

3.8.3, DG Fuel Oil, Lube Oil, and Starting Air, SR 3.8.3.3 Bases (Bases change only)

Description

ITS SR 3.8.3.3 requires a verification of diesel generator fuel oil properties. The ITS Bases for this Surveillance discusses both temperature requirements (in °F) and kinematic viscosity requirements specified in degrees. The Bases for this surveillance, at the top of page B 3.8.3-6, inadvertently used "°F" and the "°" symbol for viscosity instead of the word "degree". The Bases description is revised to use the word "degree" when referring to viscosity requirements. In addition, this change includes revising the word "Gravity" to a lower case "g" (i.e., gravity) where it is used in terms of the API requirement.

Affected Pages

Bases Markup – Page 111

BASES

or an API gravity of within 0.3 degrees at 60 °F, or a specific gravity of within 0.0016 at 60 / 60 °F when compared to the supplier's certificate

SURVEILLANCE REQUIREMENTS (continued)

degrees

of ≥ 0.83 and ≤ 0.89 or an API gravity at 60 °F of ≥ 27 and ≤ 39 °F; a kinematic viscosity at 40 °C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F, and

water and sediment content of less than or equal to 0.05% when tested in accordance with ASTM D1796-83

c. Verify that the new fuel oil has ~~a clear and bright appearance with proper color when tested in accordance with ASTM D4176 [ ]~~ (Ref. 6).

CTS Values

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975 [▲] (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975 [▲] (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552 [▼] (Ref. 6) or ASTM D2622 [▲] (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

6 → 81 → 79

82

CTS Values

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D2276 [▼], Method A (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. ~~[For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be considered and tested separately.]~~

78

2 → is

than one tank (i.e., day tanks and storage tanks)

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

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REVISION 3

CHANGE 4L

Affected BVPS ITS

3.8.4, DC Sources Operating, SR 3.8.4.3, CTS markup (only affects CTS markup)
3.8.6, Battery Parameters, SR 3.8.6.6, CTS markup, (only affects CTS markup)

Description

ITS Surveillances Requirements 3.8.4.3 and 3.8.6.6 allow for the option to use a modified performance discharge test. The corresponding markup of CTS Surveillance 4.8.2.3.2.e on CTS page 3/4 8-10 is revised to more clearly show the option to use a modified performance discharge test. The improved CTS markup resulted in the addition of a new DOC (A.9) on the same page. This change also includes the deletion of an unnecessary arrow line from the LA6 DOC designation to an unrelated change on the same CTS page. These changes do not affect the resulting ITS and are only intended to improve the clarity of the CTS markups.

Affected Pages

CTS Markup – Page 203

CTS DOC – Page 283

ELECTRIC POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

L8 M4 L10 50 L18

1. The parameters in Table 3.8-1 meet the Category B limits.

LA10 2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10^{-6} ohms, and

each battery pilot L7

SR 3.8.6.4 3. The average electrolyte temperature of every tenth cell of connected cells is above 60°F.

minimum established design limits

c. At least once per 18 months by verifying that:

LA8

LA10 1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

L3 3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^{-6} ohms, and LA4

greater than or equal to the minimum established float voltage

SR 3.8.4.2 4. The battery charger will supply at least 100 amperes at 140 volts for at least 4 hours

Insert proposed note Insert 2nd test allowance L2

SR 3.8.4.3 d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the 2 hour design duty cycle when the battery is subjected to a battery service test. LA5

1st Frequency SR 3.8.6.6

Note to SR 3.8.6.6 L1

SR 3.8.6.6 e. At least once per 60 months during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test.

or a modified performance discharge test

A9

f. At least once per 18 months, during shutdown, performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

Note to SR 3.8.4.3

2nd Frequency SR 3.8.6.6 LA6

* The specified 18-month surveillance interval during the first fuel cycle may be extended to coincide with completion of the first refueling outage.

A3

The modified performance discharge test in SR 3.8.6.6 A9

The purpose of 3.8.6 LCO and Applicability is to ensure the batteries are OPERABLE to support the required DC sources when the sources are required to be OPERABLE. The purpose of the Note to the Actions is to allow separate entry for each battery. This change is acceptable because the technical requirements for the battery cell remain unchanged. ITS LCO 3.8.4 is applicable in MODES 1, 2, 3 and 4 and requires two trains of DC power subsystems. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.9 CTS Surveillance 4.8.2.3.2.e requires a performance discharge test of the battery every 60 months. The CTS surveillance also provides an option to use the performance discharge test in lieu of the battery service test once per 60 months. ITS SR 3.8.6.6 requires a performance discharge test or a modified performance discharge test of the battery. ITS SR 3.8.4.3 allows a modified performance discharge test to be used in lieu of the battery service test any time the battery service test is required. This changes the CTS by introducing the modified performance discharge test as a specific alternative to both the performance discharge test and the battery service test.

The performance discharge test and the battery service test are performed to verify battery operability consistent with the recommendations of IEEE-450. IEEE-450 establishes the industry standard for battery maintenance and testing. However, consistent with the definition for modified performance discharge test in IEEE-450, a modified performance discharge test encompasses the requirements of a performance discharge test and therefore may be used in lieu of a performance discharge test. IEEE-450 also specifically recommends that a modified performance discharge test may be used in lieu of a battery service test. The use of a modified performance discharge test in place of the other tests is acceptable because, for the purpose of determining battery operability, the modified performance discharge test provides an equivalent or greater test of battery operability compared to the performance discharge test and battery service test. As such, the proposed change clarifies that, consistent with the recommendations of IEEE-450 and the ISTS, an equivalent or greater test of battery operability may be used in lieu of the CTS test requirements. The proposed change is designated administrative because the option provided by the ISTS and IEEE-450 to use a modified performance discharge test provides an equivalent or greater test of battery operability than the existing CTS test requirements.

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 4M

Affected BVPS ITS

3.2.1, Heat Flux Hot Channel Factor ($F_Q Z$), SR 3.2.1.2 Bases (Bases change only)

Description

This change revises an ITS bases reference to requirements contained in the COLR. The Bases for SR 3.2.1.2, references the W(Z) information contained in the COLR. The current ITS Bases refers to a W (Z) curve and the lower and upper % core heights that are part of the W(Z) requirement. However, due to pending changes to the information in the COLR, the Bases references to this COLR information must be revised. The "W(Z) curve" is revised to a "W(Z)Table" and the % core height is revised from 0-15% to 0 -10% for the lower core region and from 85-100% to 90-100% for the upper core region. These changes will make the ITS Bases consistent with the COLR at the time the ITS conversion LAR is implemented.

Affected Pages

Bases Markup – Page 49

SURVEILLANCE REQUIREMENTS (continued)

Performing this Surveillance in MODE 1 prior to exceeding 75% RTP ensures that the $F_Q^C(Z)$ limit is met when RTP is achieved, because peaking factors generally decrease as power level is increased.

If THERMAL POWER has been increased by ≥ 10% RTP since the last determination of $F_Q^C(Z)$, another evaluation of this factor is required [12] hours after achieving equilibrium conditions at this higher power level (to ensure that $F_Q^C(Z)$ values are being reduced sufficiently with power increase to stay within the LCO limits).

The Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup because such changes are slow and well controlled when the plant is operated in accordance with the Technical Specifications (TS).

SR 3.2.1.2

The nuclear design process includes calculations performed to determine that the core can be operated within the $F_Q(Z)$ limits. Because flux maps are taken in steady state conditions, the variations in power distribution resulting from normal operational maneuvers are not present in the flux map data. These variations are, however, conservatively calculated by considering a wide range of unit maneuvers in normal operation. The maximum peaking factor increase over steady state values, calculated as a function of core elevation, Z, is called W(Z). Multiplying the measured total peaking factor, $F_Q^C(Z)$, by W(Z) gives the maximum $F_Q(Z)$ calculated to occur in normal operation, $F_Q^W(Z)$.

The limit with which $F_Q^W(Z)$ is compared varies inversely with power above 50% RTP and directly with the function K(Z) provided in the COLR.

The W(Z) ~~curve~~ is provided in the COLR for discrete core elevations. Flux map data are typically taken for 30 to 75 core elevations. $F_Q^W(Z)$ evaluations are not applicable for the following axial core regions, measured in percent of core height:

a. Lower core region, from 0 to ~~15~~% inclusive and

b. Upper core region, from ~~85~~ to 100% inclusive.

The top and bottom 15% of the core are excluded from the evaluation because of the low probability that these regions would be more limiting

2

The SR Note specifies in part "If measurements indicate that the maximum over z of [$F_Q^C(Z)$/ K(Z)] has increased ...". This statement in the Note refers to the fact that both F_Q^C and K are functions of the axial height. At each applicable core *elevation the ratio of* $F_Q^C(Z)$ /K(Z) is calculated to determine the maximum ratio (maximum over z). If this maximum ratio has increased since the last set of evaluations, then the Note modifying this SR specifies additional verifications that must be performed.

Table

1

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90

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 4N

Affected BVPS ITS

3.8.1, AC Sources – Operating, Required Actions A.2 and B.2 Bases (Bases change only)

Description

This change clarifies the Bases for LCO 3.8.1, Required Actions A.2 and B.2 consistent with the reviewer's note in the Bases of these Actions. These AC Source Actions address the inoperability of a single offsite source (A.2) and a single diesel generator (B.2). The Actions require that redundant features on the opposite train be operable. A reviewer's note in the Bases for each of these Actions discusses when the AFW turbine-driven pump must be considered a redundant required feature. The proposed Bases addition clarifies that for BVPS, the turbine-driven AFW pump must be considered a redundant feature consistent with the guidance of the reviewers note.

Affected Pages

Bases Markup – Pages 69 & 71

Rev. 3, Change 4N

BASES

ACTIONS (continued)

~~auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~

A.2

Required Action A.2, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power train. ~~This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included.~~

The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. The train has no offsite power supplying its loads and

b. A required feature on the other train is inoperable.

If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, that are associated with the other train that has offsite power, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a

5

A single motor-driven AFW pump does not provide sufficient flow to meet the most limiting accident analysis assumptions. Two out of the three AFW pumps are necessary to assure sufficient flow to meet the accident analyses. Therefore, in order to ensure the AFW safety function is maintained, the turbine-driven AFW pump must be considered a redundant required feature for the purposes of this Required Action.

3

5

9

s

ACTIONS (continued)

frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered.

- REVIEWER'S NOTE -

The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.

3

5

A single motor-driven AFW pump does not provide sufficient flow to meet the most limiting accident analysis assumptions. Two out of the three AFW pumps are necessary to assure sufficient flow to meet the accident analyses. Therefore, in order to ensure the AFW safety function is maintained, the turbine-driven AFW pump must be considered a redundant required feature for the purposes of this Required Action.

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. ~~This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included.~~ Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG.

5

The Completion Time for Required Action B.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. An inoperable DG exists and

b. A required feature on the other train (Train A or Train B) is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked.

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REVISION 3

CHANGE 40

Affected BVPS ITS

3.8.1, AC Sources – Operating, SR 3.8.1.13 ITS and Bases change

Description

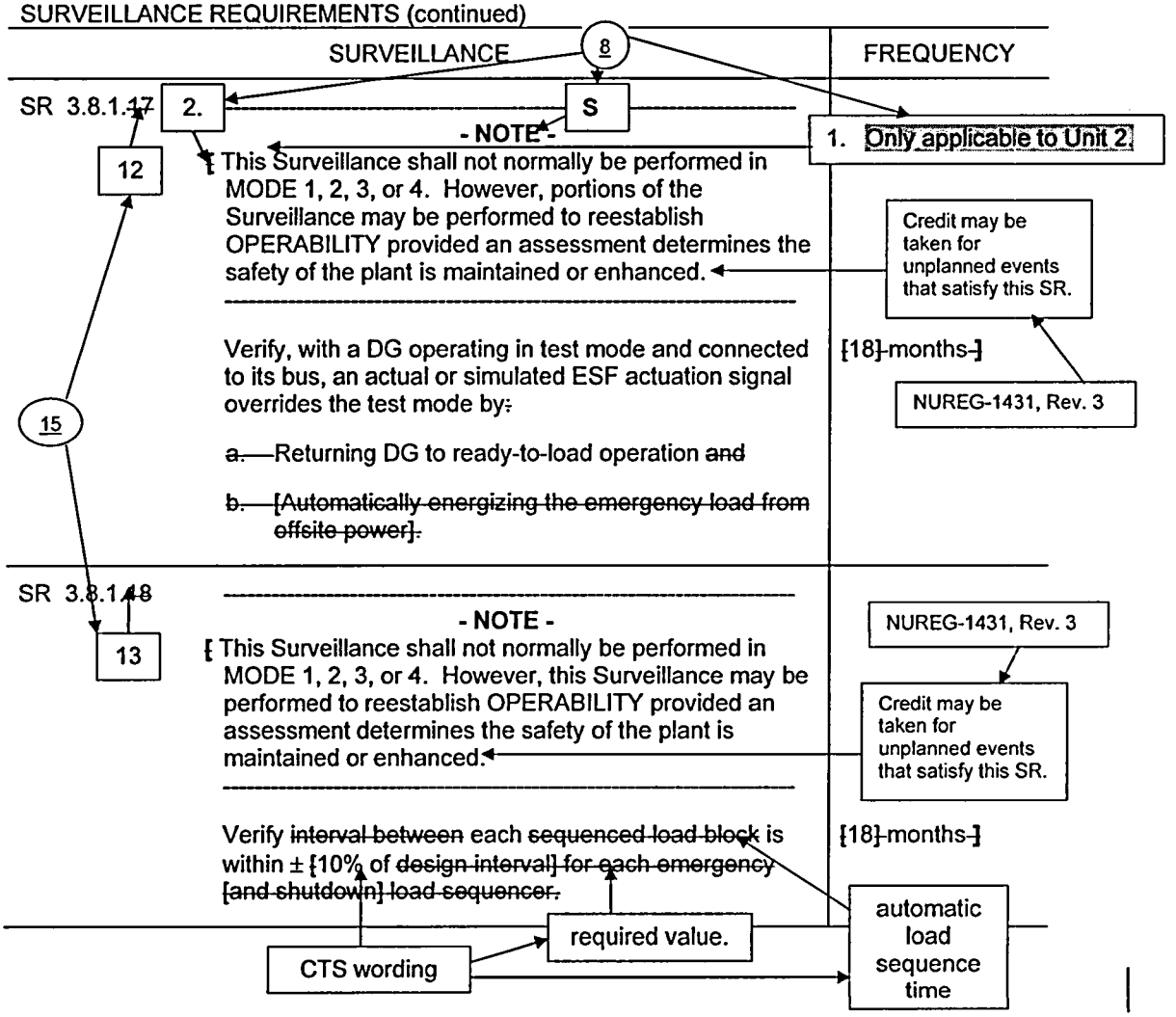
This change revises ITS SR 3.8.1.13 and associated Bases to be more consistent with the corresponding plant specific CTS requirements. In ITS SR 3.8.1.13, the phrase "...each automatic load sequence timer is within ± 10% of required value." is revised to "... each automatic load sequence time is within ± 10% of required value". The associated Bases is also revised to more accurately state the surveillance requirement. These changes are made to maintain consistency with the CTS and avoid potential confusion regarding the use of the word "timer" and "interval" in the ITS and Bases.

Affected Pages

ITS Markup – Page 17

Bases Markup – Page 94

SURVEILLANCE REQUIREMENTS (continued)



Rev. 3, Change 40

BASES

SURVEILLANCE REQUIREMENTS (continued)

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for the assessment.]

9

verification that each automatic load sequence time is within ± 10% of the required value

5

timer(s)

SR ~~3.8.1.18~~ 13 2 with 9 1, 2, 3, or 4

Under accident [~~and loss~~ of offsite power] conditions loads are sequentially connected to the bus by the [automatic load sequencer]. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The ~~[10]% load sequence time interval tolerance~~ ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.

This restriction from normally performing the Surveillance in MODE 1, 2, 3 or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1, 2, 3 or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR.

TSTF-472

~~- REVIEWER'S NOTE -~~

~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

3

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REVISION 3

CHANGE 4P

Affected BVPS ITS

3.2.4, Quadrant Power Tilt Ratio (QPTR), Required Action A.1 Bases (Bases change only)

Description

This change revises ITS 3.2.4, Required Action A.1 bases to be more consistent with Required Action A.1. The Required Action specifies a power level reduction of ≥ 3% from 100% power. The corresponding ITS bases does not specify ≥ the required % power reduction and does not use the word "from" in the description of the Required Action. The proposed change is made to eliminate potential confusion by making the bases description of the Action consistent with the wording of the Action itself.

Affected Pages

Bases Markup – Page 83

Rev. 3, Change 4P

BASES

APPLICABLE SAFETY ANALYSES (continued)

The QPTR limits ensure that $F^N_{\Delta H}$ and $F_Q(Z)$ remain below their limiting values by preventing an undetected change in the gross radial power distribution.

In MODE 1, the $F^N_{\Delta H}$ and $F_Q(Z)$ limits must be maintained to preclude core power distributions from exceeding design limits assumed in the safety analyses.

The QPTR satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

The QPTR limit of 1.02, at which corrective action is required, provides a margin of protection for both the DNB ratio and linear heat generation rate contributing to excessive power peaks resulting from X-Y plane power tilts. A limiting QPTR of 1.02 can be tolerated before the margin for uncertainty in $F_Q(Z)$ and $(F^N_{\Delta H})$ is possibly challenged.

APPLICABILITY

The QPTR limit must be maintained in MODE 1 with THERMAL POWER > 50% RTP to prevent core power distributions from exceeding the design limits.

Applicability in MODE 1 ≤ 50% RTP and in other MODES is not required because there is either insufficient stored energy in the fuel or insufficient energy being transferred to the reactor coolant to require the implementation of a QPTR limit on the distribution of core power. The QPTR limit in these conditions is, therefore, not important. Note that the $F^N_{\Delta H}$ and $F_Q(Z)$ LCOs still apply, but allow progressively higher peaking factors at 50% RTP or lower.

ACTIONS

A.1

≥ from

With the QPTR exceeding its limit, a power level reduction of 3% RTP for each 1% by which the QPTR exceeds 1.00 is a conservative tradeoff of total core power with peak linear power. The Completion Time of 2 hours allows sufficient time to identify the cause and correct the tilt. Note that the power reduction itself may cause a change in the tilted condition.

TSTF-241 (insert B-A.1) text inadvertently omitted from Revision 2.

The maximum allowable power level initially determined by Required Action A.1 may be affected by subsequent determinations of QPTR. Increases in QPTR would require power reduction within 2 hours of QPTR determination, if necessary to comply with the decreased maximum allowable power level and increasing power up to this revised limit.

. Decreases in QPTR would allow increasing the maximum allowable power level

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REVISION 3

CHANGE 4Q

Affected BVPS ITS

3.8.1, AC Sources – Operating, Required Action B.1

Description

ITS 3.8.1 Required Action B.1 addresses an inoperable diesel generator and requires a surveillance to be performed on the offsite circuits. This Required Action is revised consistent with the ISTS writers guide and the other owners group's ISTS to include the word "operable" in Required Action B.1 to qualify the required offsite circuit(s) to which the SR is applicable.

The change is necessary because an offsite source may be inoperable at the same time as the diesel generator addressed in Required Action B.1. Therefore, Required Action B.1 should only require Surveillance 3.8.1.1 to be performed on "operable" offsite circuit(s). Surveillances are not required to be performed on inoperable equipment (per SR 3.0.1) and performing a Surveillance on an inoperable offsite power source would not yield valid or useful results.

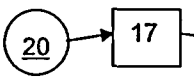
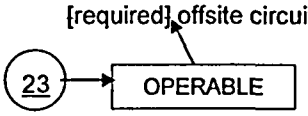
In addition, the other ISTS (i.e., NUREGs 1430, 1432, 1433 and 1434) use the word operable in Required Action B.1 when referring to the offsite circuit(s). Therefore, BVPS is adding "operable" to Required Action B.1 to qualify the Required Action consistent with SR 3.0.1 and the other Owners Group ISTS.

Affected Pages

ITS Markup – Page 5

ITS JFD – Page 49A

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3 Restore [required] offsite circuit to OPERABLE status. 	72 hours AND 6 days from discovery of failure to meet LCO
B. One [required] DG inoperable.	B.1 Perform SR 3.8.1.1 for the [required] offsite circuit(s). 	1 hour AND Once per 8 hours thereafter
	AND B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND B.3.1 Determine OPERABLE DG(s) is not inoperable due to common cause failure.	[24] hours
	OR B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	[24] hours
	AND	

21. ISTS SR 3.8.1.9 (ITS SR 3.8.1.8) verifies the capability of the DGs to recover from a transient consisting of the loss of the single largest load. The bracketed [3] second time allowed for the frequency to recover in ITS SR 3.8.1.8.c is revised to 4 seconds. The Bases for this SR states that: "The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The 3 seconds specified is equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load." However, the latest Revision of Regulatory Guide 1.9 (Rev. 3) in Section 1.4 states that "Frequency should be restored to within 2 percent of nominal in less than 60 percent of each load-sequence interval for stepload increase and in less than 80 percent of each load-sequence interval for disconnection of the single largest load, and voltage should be restored to within 10 percent of nominal within 60 percent of each load-sequence time interval. The bracketed number (i.e., 3) specifying the frequency limit in ITS SR 3.8.1.8.c is based on 60% of a 5 second load sequence interval. However, ITS SR 3.8.1.8 specifies the disconnection of the DG's single largest load. Consistent with the guidance provided in Regulatory Guide 1.9, for the disconnection of the single largest load, the time allowed for restoration of the frequency is changed from 3 seconds to 4 seconds. The proposed 4 second time limit represents 80 percent of the 5 second load sequence interval and is acceptable as it is consistent with the recommendations of Regulatory Guide 1.9, Rev. 3 for this specific surveillance test.

22. The power factor requirement specified for ITS SRs 3.8.1.8 and 3.8.1.10 is revised to be more consistent with the BVPS worst case accident loading power factor. This changes the bracketed standard ISTS power factor of 0.9 to 0.89 for the BVPS ITS.

23 ITS 3.8.1 Required Action B.1 addresses an inoperable diesel generator and requires a surveillance to be performed on the offsite circuits. This Required Action is revised consistent with the ISTS writers guide and the other owners group's ISTS to include the word "operable" when referring to the required offsite circuit(s). An offsite source may be inoperable at the same time as the diesel generator addressed in Required Action B.1. Therefore, Required Action B.1 should only require Surveillance 3.8.1.1 to be performed on "operable" offsite circuit(s). Surveillances are not required to be performed on inoperable equipment (per SR 3.0.1) and the performance of a surveillance on an inoperable offsite power source would not yield valid or useful results. In addition, the other ISTS (i.e., NUREGs 1430, 1432, 1433 and 1434) use the word operable in Required Action B.1 when referring to the offsite circuit(s). Therefore, BVPS is adding "operable" to Required Action B.1 to qualify the Required Action consistent with SR 3.0.1 and the other Owners Group ISTS.

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REVISION 3

CHANGE 4R

Affected BVPS ITS

ITS 3.7.5, Auxiliary Feedwater (AFW) System, Action Conditions A and C, and the Notes in Action Conditions D & E

Description

Several Action Conditions of ITS 3.7.5, AFW System, address the steam supply lines to the AFW turbine-driven pump. ITS 3.7.5 requires two turbine-driven pump steam supply lines to be operable (in bases). BVPS has a total of 3 turbine-driven AFW pump steam supply lines (one from each main steam line) only two of which are required to be operable. Based on the BVPS design providing a third 100% capacity steam supply line to the turbine driven AFW pump, the Action Conditions of ITS 3.7.5 are revised to include the word "required" when referring to the turbine-driven AFW pump steam supply lines. This change is necessary to clarify that the Action Conditions only pertain to the two required steam supply lines and do not include the third (extra) steam supply line included in the BVPS design.

The ISTS did not include the word required because the typical PWR design only includes two 100% steam supply lines for the turbine-driven pump. The addition of the word "required" to the BVPS ITS 3.7.5 Action Conditions is based on the BVPS specific plant design and is consistent with the ISTS use of the word required in other Actions where additional equipment (more than required by the LCO) is available. This change affects the wording of Action Conditions A and C, and the Notes in Action Conditions D & E and is acceptable based on the BVPS specific design that includes a third 100% capacity steam supply line to the turbine-driven AFW pump.

Affected Pages

ITS Markup – Pages 16, 17 & 20

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

and three feedwater injection headers

1

LCO 3.7.5 [Three] AFW trains shall be OPERABLE.

and the required feedwater injection header(s), are

- NOTE -

[Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.]

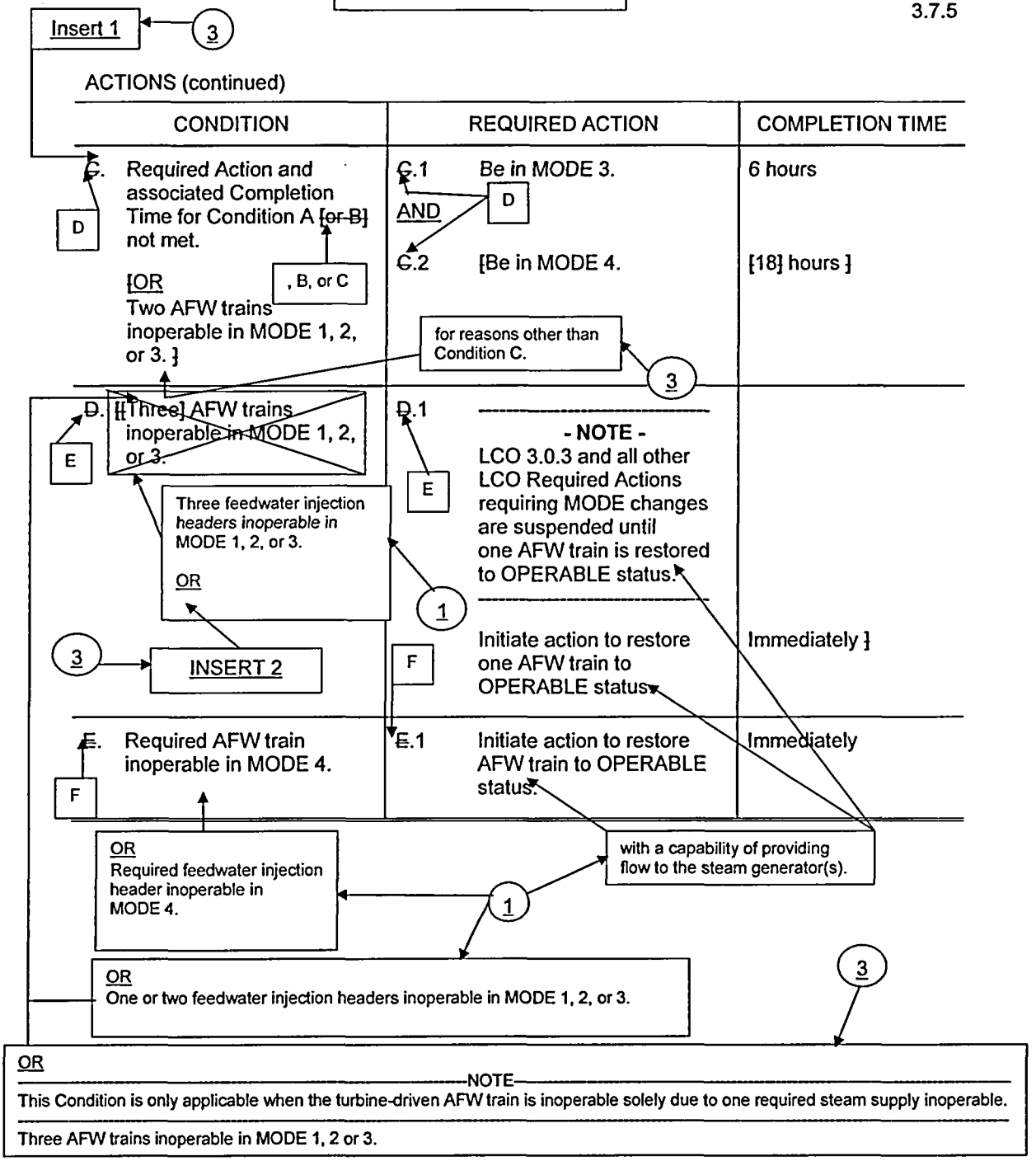
TSTF-359

-NOTE-
LCO 3.0.4.b is not applicable [when entering MODE 1.]

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [~~One steam supply to turbine driven AFW pump inoperable.~~ OR - NOTE - Only applicable if MODE 2 has not been entered following refueling. One turbine driven AFW pump inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status. 3 Turbine driven AFW train inoperable due to one required steam supply inoperable in MODE 1, 2 or 3.	7 days AND 10 days from discovery of failure to meet the LCO]
	B.1 -NOTE- Only applicable if both supply headers are OPERABLE. Realign OPERABLE AFW pumps to separate train supply headers. AND	2 hours 2
B. One AFW train inoperable in MODE 1, 2, or 3 [for reasons other than Condition A].	B.1 Restore AFW train to OPERABLE status. 2	72 hours AND [10 days from discovery of failure to meet the LCO]


Insert 1
3
ACTIONS (continued)
CONDITION
REQUIRED ACTION
COMPLETION TIME
C. Required Action and associated Completion Time for Condition A [or B] not met.
D
C.1 Be in MODE 3.
AND
D
6 hours
C.2 [Be in MODE 4.
[18] hours]
[OR
Two AFW trains inoperable in MODE 1, 2, or 3.]
, B, or C
for reasons other than Condition C.
3
D. [[Three] AFW trains inoperable in MODE 1, 2, or 3.
E
D.1
E
- NOTE -
LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.
Three feedwater injection headers inoperable in MODE 1, 2, or 3.
OR
1
3
INSERT 2
F
Initiate action to restore one AFW train to OPERABLE status
Immediately]
E. Required AFW train inoperable in MODE 4.
F
E.1 Initiate action to restore AFW train to OPERABLE status.
Immediately
OR
Required feedwater injection header inoperable in MODE 4.
with a capability of providing flow to the steam generator(s).
1
OR
One or two feedwater injection headers inoperable in MODE 1, 2, or 3.
3
OR
NOTE
This Condition is only applicable when the turbine-driven AFW train is inoperable solely due to one required steam supply inoperable.
Three AFW trains inoperable in MODE 1, 2 or 3.

Rev. 3, Change 4R

INSERTS FOR ITS 3.7.5

Auxiliary Feedwater (AFW) System

1. CONDITION C (From TSTF-412)

C. Turbine driven AFW train inoperable due to one required steam supply inoperable in MODE 1, 2 or 3. AND One motor driven AFW train inoperable in MODE 1, 2 or 3.	C.1 Restore the steam supply to the turbine driven train to OPERABLE status. OR C.2 Restore the motor driven AFW train to OPERABLE status.	[24]~~[48]~~ hours [24]~~[48]~~ hours

(For Information Only.) TSTF-412 Condition C Completion Time Reviewers Note:

The 24 hour Completion Time is applicable to plants that can no longer meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB results in the loss of the remaining steam supply to the turbine driven AFW pump.

The 48 hour Completion Time is applicable to plants that can still meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB results in the loss of the remaining steam supply to the turbine driven AFW pump.

2. Condition E (From TSTF-412)

---NOTE---
This Condition is only applicable when the turbine-driven AFW train is inoperable for reasons other than one required steam supply inoperable.

Three AFW trains inoperable in MODE 1, 2, or 3.

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 4S

Affected BVPS ITS

ITS 3.3.2, ESFAS Instrumentation Bases (Bases change only)

Description

The Bases for ESFAS Function 7, Automatic Switchover to Containment Sump, is revised to clarify the ITS 3.3.2 requirements for this ESFAS Function. The Slave Relay Test requirements for the automatic switchover to containment sump are addressed in the ECCS pump and valve actuation verification surveillances required by ITS LCO 3.5.2, ECCS – Operating. As such, the Bases is revised to clarify the operability and testing requirements for ESFAS Function 7 consistent with the corresponding ITS requirements.

Affected Pages

ITS Bases Markup – Page 58

Rev. 3 Change 4S

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

3

In Unit 1, the low head SI (LHSI) pumps and containment recirculation spray (RS) pumps draw water from the containment sump. The RS pumps pump the water through the RS heat exchanger to the recirculation spray headers. The LHSI pumps circulate the water back to the reactor and provide suction to the High Head SI (HHSI) pumps. In Unit 2, during the recirculation phase, one RS pump per train provides the low head injection function and suction to the HHSI pump and one RS pump per train provides the recirculation spray function. Both the Unit 2 RS pumps on each train draw water from the containment sump and pump water through an RS heat exchanger.

7

Automatic Switchover to Containment Sump

At the end of the injection phase of a LOCA, the RWST will be nearly empty. Continued cooling must be provided by the ECCS to remove decay heat. The source of water for the ECCS pumps is automatically switched to the containment recirculation sump. The low ~~head residual~~ heat removal (RHR) pumps and containment spray pumps draw the water ~~from the containment recirculation~~ sump, the RHR pumps pump the water ~~through the RHR heat exchanger~~, inject the water ~~back into the~~ RCS, and supply the cooled water to the ~~other ECCS~~ pumps. Switchover from the RWST to the containment sump must occur before the RWST empties to prevent damage to the ~~RHR~~ pumps and a loss of core cooling capability. For similar reasons, switchover must not occur before there is sufficient water in the containment sump to support ESF pump suction. Furthermore, early switchover must not occur to ensure that sufficient borated water is injected from the RWST. This ensures the reactor remains shut down in the recirculation mode.

a. Automatic Switchover to Containment Sump - Automatic Actuation Logic ~~and Actuation Relays~~

~~Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.~~

(Unit 1) and extreme low (Unit 2)

b, c. Automatic Switchover to Containment Sump - Refueling Water Storage Tank (RWST) Level - Low ~~Low~~ Coincident With Safety Injection ~~and Coincident With Containment Sump Level - High~~

This LCO requires two trains to be OPERABLE. The trains consist of the actuation logic and associated master relays for this function. The actuation logic consists of all circuitry housed within the actuation subsystems. The LCO for this Function does not include requirements for slave relay OPERABILITY. The SRs for this Function do not include a SLAVE RELAY TEST due to equipment safety concerns if such a test was performed at power. The verification of required slave relay OPERABILITY for this Function is included in LCO 3.5.2, ECCS – Operating (SRs 3.5.2.5 and 3.5.2.6). These ECCS SRs are 18-month Surveillances that allow the required SLAVE RELAY TEST to be performed safely. Therefore, LCO 3.5.2 addresses the OPERABILITY of the slave relays for this Function.

During the injection phase of a LOCA, the RWST is the source of water for all ECCS pumps. A low ~~low~~ level in the RWST coincident with an SI signal provides protection against a loss of water for the ECCS pumps and indicates the end of the injection phase of the LOCA. The RWST is equipped with four level transmitters. These transmitters provide no control functions. Therefore, a two-out-of-four logic is adequate to initiate the protection function actuation. Although only three channels would be sufficient, a fourth channel has been added for increased reliability.

due to the energize to trip design of these channels.

The RWST -~~Low Low~~ Allowable Value~~/Trip Setpoint~~ has both upper and lower limits. The lower limit is selected to ensure

(Unit 1) and extreme low (Unit 2).

The SI interlock is maintained by latching relays until reset manually.

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
Nos. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 5

Affected BVPS ITS

5.5.12, Containment Leakage Rate Testing Program

Description

This change revises the acceptance criteria for the containment Leakage Rate Testing Program (ITS 5.5.12.d.1). Currently the affected portion of the acceptance criteria (first sentence of part d.1) states the following: "Containment leakage rate acceptance criterion is 1.0 L_a." The BVPS CTS states the acceptance criteria as "≤ 1.0 L_a." This portion of NUREG-1431 was added by TSTF-52, Rev. 3.

TSTF-52 introduced the "A & B Options" from 10 CFR 50 Appendix J into the Containment Leakage Rate Testing Program and was incorporated into Revision 2 of NUREG-1431. However, TSTF-52 also specifies the affected portion of the part d.1 acceptance criterion as "≤ 1.0 L_a." TSTF-52 introduced three options in the program, Option A, Option B, and Option A/B. Each of these options had a separate Acceptance criteria section (which contained part d.1 or c.1 for Option A). In TSTF-52, the affected sentence of Part d.1/c.1 for all options was stated as "Containment leakage rate acceptance criterion is ≤1.0 L_a." However, when TSTF-52 was incorporated into NUREG-1431 part d.1 of Option B was incorporated without the ≤ symbol. The other two options introduced by TSTF-52 were correctly incorporated into NUREG-1431 with the affected portion of the acceptance criteria being stated as: "Containment leakage rate acceptance criterion is ≤1.0 L_a."

BVPS utilizes the Option B portion of the program which is missing the ≤ symbol. Therefore, this change is necessary to make the BVPS ITS consistent with the corresponding BVPS CTS requirement and with the original intent of TSTF-52.

Affected Pages:

The following Table(s) list the affected pages by type (i.e., ITS markup, CTS markup, etc.). In order to facilitate review by ITS section, a separate table is provided for each ITS section affected by the change. **The page numbers listed are the ITS section specific consecutive numbers found in the lower right corner of each page.**

(continued)

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

Change 5 (continued)

Note: Because the affected page(s) for each change were extracted from a complete ITS section electronic file, the electronic hyperlinks (created in the complete ITS section file) do not work in the collection of affected pages that follow this cover page.

ITS SECTION 5.0 (ADMINISTRATIVE CONTROLS) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES: 21**
ITS JFDS	**PAGES: 63**
ITS BASES MARKUPS	**PAGES:** None
ITS BASES JFDS	**PAGES:** None
CTS MARKUPS	**PAGES: 86**
CTS DOCS	**PAGES:** None

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

12

22

For Unit 1, exemptions to Appendix J of 10 CFR 50 are dated November 19, 1984, December 5, 1984, and July 26, 1995. For Unit 2, exemptions to Appendix J of 10 CFR 50 are as stated in the Operating License.

~~a) Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a.~~

~~b) For each door, leakage rate is ≤ [0.01 L_a] when pressurized to [≥ 10 psig].~~

22

~~d. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.~~

~~e. Nothing in these Technical Specifications shall be construed to modify the Testing Frequencies required by 10 CFR 50, Appendix J.~~

~~[OPTION B]~~

1. For Unit 1, the next Type A test performed after the May 29, 1993 Type A test shall be performed no later than May 28, 2008.
2. For Unit 2, the next Type A test performed after the November 10, 1993 Type A test shall be performed no later than November 9, 2008.

22

a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September, 1995, [as modified by the following exceptions:

~~1. . . .]~~

43.3 psig (for Unit 1) and 44.9 psig (for Unit 2)

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is ~~[45 psig]. The containment design pressure is [50 psig]~~.

22

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be ~~[~~0.10%~~]~~ of containment air weight per day.

prior to MODE 4 entry

22

0.10%

d. Leakage rate acceptance criteria are:

≤

35

1. Containment leakage rate acceptance criterion is 1.0 L_a. ~~During~~ the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a for the Type B and C tests and ≤ 0.75 L_a for Type A tests.

1

However, during

2. Air lock testing acceptance criteria are:

a) Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a.

Insert 6

~~b) For each door, leakage rate is ≤ [0.01 L_a] when pressurized to [≥ 10 psig].~~

22

The proposed change is based on approved TSTF-479 as modified by agreement with the NRC. The agreed change deviates from the approved TSTF-479 in that it restricts the test interval extension provided by SR 3.0.2 to inservice test intervals of 2 years or less. The change to TSTF-479 is based on the fact that the inservice test intervals > 2 years provide adequate time to schedule the required testing without the additional extension provided by SR 3.0.2.

35. This change revises the acceptance criteria for the containment Leakage Rate Testing Program (ITS 5.5.12.d.1). Currently the affected portion of the acceptance criteria (first sentence of part d.1) states the following: "Containment leakage rate acceptance criterion is 1.0 L_a." The BVPS CTS states this acceptance criteria as "≤ 1.0 L_a." In addition, this portion of NUREG-1431 was added by TSTF-52, Rev. 3. TSTF-52 introduced the "A & B Options" from 10 CFR 50 Appendix J into the Containment Leakage Rate Testing Program and was incorporated into Revision 2 of NUREG-1431. However, TSTF-52 also specifies the affected portion of the part d.1 acceptance criterion as "≤ 1.0 L_a." TSTF-52 introduced three options in the program, Option A, Option B, and Option A/B. Each of these options had a separate Acceptance criteria section (which contained part d.1 or c.1 in Option A). In TSTF-52, the affected sentence of Part d.1/c.1 for all options was stated as "Containment leakage rate acceptance criterion is ≤1.0 L_a." However, when TSTF-52 was incorporated into NUREG-1431 part d.1 of Option B was incorporated without the ≤ symbol. The other two options introduced by TSTF-52 were correctly incorporated into NUREG-1431 with the affected portion of the acceptance criteria being stated as: "Containment leakage rate acceptance criterion is ≤1.0 L_a." BVPS utilizes the Option B portion of the program which is missing the ≤ symbol. Therefore, this change is necessary to make the BVPS ITS consistent with the corresponding BVPS CTS requirement and with the original intent of TSTF-52.

5.5.12.b CONTAINMENT LEAKAGE RATE TESTING PROGRAM (Continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 44.9 psig.

5.5.12.c The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.10% of containment air weight per day.

Leakage Rate acceptance criteria are: A25 → prior to MODE 4 entry

5.5.12.d

a. Containment leakage rate acceptance criterion is ≤ 1.0 L_a ~~for the overall Type A leakage test and < 0.60 L_a for the Type B and Type C tests on a minimum pathway leakage rate (MNPLR) basis~~. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a ~~on a maximum pathway leakage rate (MXPLR)[43] basis~~ for Type B and Type C tests and ~~< 0.75 L_a~~ ≤ 0.75 L_a for Type A tests. L2

5.5.12.f Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

Insert Unit 2 Air lock Criteria From CTS 3.6.1.3

A11 b. A6 → Air lock testing acceptance criteria and required action are as stated in Specification 3.6.1.3 titled "Containment Air Locks."

5.5.12.e ~~The provisions of Specification 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.~~

The provisions of ~~Specification 4.0.3~~ are applicable to the Containment Leakage Rate Testing Program. SR 3.0.3

Insert Unit 1 Air lock Criteria From CTS 3.6.1.3

5.5.10 ~~6.18~~ TECHNICAL SPECIFICATIONS (TS) BASES CONTROL PROGRAM

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. a change in the TS incorporated in the license; or

~~(2) For penetrations which are isolated by use of a closed valve(s), blind flange(s), or de-activated automatic valve(s), the MXPLR of the isolated penetration is assumed to be the measured leakage through the isolation device(s).~~ L2

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 6

Affected BVPS ITS

5.5.7, Ventilation System Test Program (CTS markups and DOCs only)

Description

This change provides some minor improvements to the CTS markups and DOCs associated with the ventilation system surveillance requirements incorporated into ITS 5.5.7. No changes are made to the BVPS ITS. The change incorporates minor revisions related to License Amendment Request (LAR) Nos. 325 (Unit 1) and 195 (Unit 2) and improves the accuracy of the CTS markups. LAR Nos. 325 (Unit 1) and 195 (Unit 2) are scheduled to be approved prior to the BVPS ITS conversion.

In ITS Section 5.0 , some ventilation system surveillances were moved from the ventilation system specifications (in Section 3.7) to the Ventilation Filter Test Program (VFTP) in ITS 5.5.7. These CTS surveillances were re-organized consistent with the ITS VFTP. In addition, LARs 325 (Unit 1) and 195 (Unit 2) "Control Room Habitability" revised some ventilation system specifications and affected some CTS references to the ventilation system surveillance numbers used in Section 5.0. In order to clarify the disposition of some CTS surveillances in the ITS VFTP and to better reflect ventilation system changes introduced by LARs 325 (Unit 1) and 195 (Unit 2) some details of the CTS markups and DOCs are revised.

These changes do not result in a change to the ITS and only affect the details of the CTS change documentation. The changes include some changes to CTS markups to help clarify the markup, revisions to DOCS to enhance the description of the change or revise a referenced CTS surveillance number, and in one case to make a new More Restrictive DOC to better explain a change resulting from the incorporation of draft pages from LARs 325/195.

Affected Pages:

The following Table(s) list the affected pages by type (i.e., ITS markup, CTS markup, etc.). In order to facilitate review by ITS section, a separate table is provided for each ITS section affected by the change. **The page numbers listed are the ITS section specific consecutive numbers found in the lower right corner of each page.**

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BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
NOS. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

Change 6 (continued)

Note: Because the affected page(s) for each change were extracted from a complete ITS section electronic file, the electronic hyperlinks (created in the complete ITS section file) do not work in the collection of affected pages that follow this cover page.

ITS SECTION 5.0 (ADMINISTRATIVE CONTROLS) INDEX OF AFFECTED PAGES	
ITS MARKUPS	**PAGES:** None
ITS JFDS	**PAGES:** None
ITS BASES MARKUPS	**PAGES:** None
ITS BASES JFDS	**PAGES:** None
CTS MARKUPS	**PAGES: 112, 114, 116, 117, 119**
CTS DOCS	**PAGES: 129, 129A, 133, 139, 140**

LIMITING CONDITION FOR OPERATION (continued)

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the TS.

b.2 With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems for the Control Room Emergency Ventilation System (CREVS) and the Supplemental Leak Collection and Release System (SLCRS). Tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed (A17)

SURVEILLANCE REQUIREMENTS (M6)

4.7.7.1 The CREVS shall be demonstrated OPERABLE:

a. Del , and following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating.

b. At least once per 31 days by verifying that each CREVS train operates for ≥ 15 minutes with the heaters in operation.

5.5.7 ~~e.~~ At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings by: (VFTP) (LA11)

5.5.7.b ~~1.~~ Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm. (VFTP) (LA11)

5.5.7.a ~~2.~~ Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm.

(M6)

~~3.~~ Verifying a system flow rate of 800 to 1000 cfm during operation of each CREVS (A19) significant or after any structural maintenance on the charcoal adsorber bank housing

~~d.~~ 5.5.7.c At least once per 18 months or (1) after 720 hours of system operation, or (2) following painting, fire or chemical release in the vicinity of control room outside air intakes while the system is operating within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

(LA11) (VFTP)

PLANT SYSTEMS

Unit 1 CTS Page for ITS 5.5.7

LIMITING CONDITION FOR OPERATION (continued)

A1

ACTION (Continued)

b.2 With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the TS consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the TS.

SURVEILLANCE REQUIREMENTS

A19

4.7.7.1 The CREVS shall be demonstrated OPERABLE:

a. Deleted.

the vicinity of control room outside air intakes while the system is operating

b. At least once per 31 days by verifying that the CREVS train operates for ≥ 15 minutes with the heaters in operation.

5.5.7

A17

c. At least once per 18 months or after every 720 hours of system operation or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housing or (3) following painting, fire or chemical release in ~~any ventilation zone communicating with the system~~ by:

A19

significant

5.5.7.a and 5.5.7.b

A20

~~1.~~ Verifying that the filtration system satisfies the in-place penetration and by-pass leakage testing acceptance criteria of less than 0.05% when tested in accordance with ANSI N510-1980 while operating the CREVS at a flow rate of 800 - 1000 cfm.

A17

5.5.7.c

VFTP

LA11

0.68

~~2.~~ Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodine at an air flow velocity of ~~.68~~ ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

VFTP

LA11

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining a sample volume equivalent to at least two inches in diameter and with a length equal to the thickness of the bed, or

Sample obtained in accordance with Regulatory Guide 1.52, Revision 2, or using slotted tube samples in accordance with ANSI N509-1980.

PLANT SYSTEMS

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two SLCRS exhaust air filter trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each SLCRS exhaust air filter train shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating, from the control room, flow through the "standby" HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes with the heater controls operational.

b. At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following painting, fire or chemical release in any ventilation zone communicating with the system by: while the filtration system is operating (A19)

1. Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

2. Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

3. Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and

A17 → 5.5.7 → b.

significant → A19

5.5.7.b → 1. → LA11

5.5.7.a → 2.

VFTP

5.5.7.c → 3.

A17 LA11

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems for the Control Room Emergency Ventilation System (CREVS) and the Supplemental Leak Collection and Release System (SLCRS). Tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed

SURVEILLANCE REQUIREMENTS

A17

5.5.7.c

VFTP

LA11

as described in Regulatory Guide 1.52, Revision 2

verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be taken with a slotted tube sampler in accordance with ANSI N509-1980.

5.5.7.a and 5.5.7.b

~~4.~~ Verifying a system flow rate of 57,000 cfm ± 10% during system operation.

~~e.~~ At least once per 18 months by:

5.5.7.d

~~1.~~ Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

2. Verifying that the exhaust from the contiguous area is 5 minutes.

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

VFTP

LA11

d. Verifying that the air flow distribution to each HEPA filter and charcoal adsorber is within ± 20% of the averaged flow per unit after initial installation and after any maintenance affecting the flow distribution.

~~e.~~ At least once per 4 months of ~~system~~ operation, perform the surveillance requirement of 4.7.8.1.b.3.

5.5.7.c

adsorber

A17

The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

M5

5.5.7.e Demonstrate that the heaters for the SLCRS dissipate ≥ 160.9 kW and ≤ 264.5 kW when tested in accordance with ANSI N510-1980.

PLANT SYSTEMS

A1

SURVEILLANCE REQUIREMENTS (Continued)

Within 31 days after removal

A17

LA11

5.5.7.a

~~2.~~ Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

VFTP

A17

~~3.~~ Subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 90% for radioactive methyl iodide at an air flow velocity of 0.9 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 95% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

5.5.7.c

Sample obtained in accordance with Regulatory Guide 1.52, Revision 2, or using slotted tube samples in accordance with ANSI N509-1980.

LA11

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

VFTP

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

~~4.~~ Verifying a system flow rate of 36,000 cfm ± 10% during system operation.

5.5.7.a and 5.5.7.b

~~e.~~ At least once per 18 months by:

5.5.7.d

~~1.~~ Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

~~2. Verifying that the SLCRS flow is diverted through the filter train on a Containment Isolation - Phase "A" signal.~~

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

A17

The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

that would typically be included in ITS Section 5.0 for the Ventilation Filter Testing Program (VFTP) to support the operational requirements of the SLCRS heaters. The Unit 2 CTS has been revised to require the demonstration that the SLCRS heaters dissipate ≥ 160.9 kW and ≤ 264.5 kW when tested in accordance with ANSI N510-1980 (ITS 5.5.7.e).

This change is acceptable since the added surveillance requirement helps demonstrates the operability of the SLCRS heaters to perform their intended function consistent with the design requirements of the system. The heater test parameters ensure that the ANSI N510-1980 requirement to maintain a relative humidity of ≥ 70% can be met. This additional testing is consistent with similar testing required for the CREVS heaters. This change is designated as more restrictive because it imposes additional programmatic requirements in Technical Specifications.

M.6 Unit 2 CTS 4.7.7.1.c provides the Frequency for performing in-place testing of CREVS and Unit 2 CTS 4.7.7.1.d provides the Frequency for performing carbon sample laboratory testing of the CREVS. The corresponding ITS 5.5.7 Frequencies contain an additional requirements for both in-place testing and laboratory testing of the CREVS. In addition to the Unit 2 CTS 4.7.7.1.c requirements for in-place testing, ITS 5.7.7 specifies the required in-place testing be performed "...following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating." In addition to the CTS 4.7.7.1.d requirements for carbon sample laboratory analysis, ITS 5.5.7 requires laboratory analysis " after any structural maintenance on the charcoal adsorber bank housing." This changes the CTS by the addition of new CREVS Frequency requirements for in-place testing and laboratory analysis of carbon samples.

The purpose of the CTS surveillances is to provide assurance that the CREVS is maintained operable. The additional requirements included in the ITS (described above) are consistent with the purpose of the CTS surveillance requirements and implement industry standard requirements consistent with those specified in Regulatory Guide 1.52, Revision 2 and ANSI N510-1975. As such, the proposed changes provide additional assurance of CREVS operability consistent with the standards of industry practice. The proposed changes do not introduce any new plant risk or significant unavailability of the affected systems. As such, the proposed changes are acceptable. These changes are designated as more restrictive because they impose additional requirements in Technical Specifications.

Removed Detail Changes (LA)

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.2.1.a specifies that the correlation between positions described in these technical specifications and the plant-specific titles are documented in the Unit 1 or Unit 2, as applicable, UFSAR Table 13.1-2. The corresponding ITS 5.2.1.a does not include this detail. The CTS are revised to conform to the ISTS. This changes the CTS by moving the detail of the location of the correlation between Technical Specification positions and the plant specific titles to the Updated Final Safety Analysis Report (UFSAR).

The information related to plant specific titles is more appropriately discussed and controlled in the UFSAR. The removal of this detail for meeting the TS requirements is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement that the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in the Technical Specifications shall be documented in the UFSAR. Also, this change is acceptable because these requirements will be adequately controlled in the UFSAR. Changes to the UFSAR are controlled in accordance with 10CFR 50.59. This control ensures that prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

LA.2 *(Type 4 – Administrative Requirements Redundant to Regulations)* CTS 6.8.1.g requires that written procedures for the PROCESS CONTROL PROGRAM (PCP) be established, implemented, and maintained. The ITS does not include these requirements. This changes the CTS by moving the requirements from the Technical Specifications to the Updated Final Safety Analysis Report (UFSAR).

The PCP implements the requirements of 10 CFR 20, 10 CFR 61, and 10 CFR 71. Compliance with these regulations is required by the BVPS Units 1 and 2 Operating Licenses, and procedures would be the method to ensure compliance with the

because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. This type of information was included in the Technical Specifications as an administrative requirement that functioned to highlight the existing regulatory requirement. The Technical Specifications still retain requirements for the affected components to be OPERABLE. Also, this change is acceptable because these requirements will be adequately controlled by the Inservice Inspection Program and the requirements of 10 CFR 50.55a related to inservice inspection. Regulations provide an adequate level of control for the affected requirement. Therefore, relocation of the administrative requirements identified above is acceptable.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 4.6.1.3.a.1 provides procedural details for meeting the TS requirement to verify air lock door seal leakage meets the required acceptance criteria (i.e., the time period for maintaining the door seal gap pressurized). ITS 3.6.2, Containment Air Locks, and ITS 5.5.12, Containment Leakage Rate Test Program, require testing of the containment air lock door seals, but do not specify the detail of the time period for maintaining the door seal gap pressurized. This changes the CTS by moving procedural details of verifying that containment air lock door seal leakage meets the required acceptance criteria to the Containment Leakage Rate Testing Program implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement for verification that the air lock door seal leakage meets the required acceptance criteria. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the Containment Leakage Rate Testing Program by the requirements provided for the Containment Leakage Rate Testing Program in Chapter 5 of the Technical Specifications. The Technical Specifications continue to ensure that the applicable limits are met. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.11 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* Unit 1 CTS 4.7.7.1.c.2, 4.7.8.1.b.1, 4.7.8.1.b.2, 4.7.8.1.b.3, and 4.7.8.1.d, and Unit 2 CTS 4.7.7.1.c.1, 4.7.7.1.c.2, 4.7.7.1.d, 4.7.8.1.b.1, 4.7.8.1.b.2, 4.7.8.1.b.3, and 4.7.8.1.d provide procedural details for meeting the TS requirement related to ventilation filter testing of the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System. ITS 5.5.7, Ventilation Filter Testing Program, requires testing of the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System ventilation filters, but do not specify the procedural details of the testing. This changes the CTS by moving procedural details of verifying ventilation filter testing meets the required acceptance criteria to the Ventilation Filter Testing Program implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement for ventilation filters of the Control Room Emergency Ventilation

A.17 CTS 4.7.7.1 and CTS 4.7.8.1 provide ventilation filter testing requirements for the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System. ITS 5.5.7 includes these requirements in a program in the Administrative Controls Chapter 5. As such, a general program statement has been added as ITS 5.5.7. This changes the CTS by providing a Ventilation Filter Testing Program (VFTP). The ITS program provides for a separate line item requirement (ITS 5.5.7.c) for the performance of the laboratory analysis of a carbon sample. Including the laboratory analysis requirement in a separate program requirement, independent of the other ventilation system surveillance requirements, helps to clarify the conditions under which the laboratory analysis is required to be performed consistent with Regulatory Guide 1.52. The separate requirement for the laboratory analysis also clarifies the appropriate Frequency (i.e., within 31 days after removal) for the Unit 1 SLCRS requirement. In addition, a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) is provided to clarify that the allowances for Frequency extensions do apply to the test described in the VFTP. Consistent with NUREG-1431, Section 5.0, "Administrative Controls" requirements are not explicitly covered by the allowances provided in Section 3.0, "LCO/SR Applicability." Specific Frequency allowances must be directly stated in Section 5.0. As such, a statement of applicability of ITS SR 3.0.2 and SR 3.0.3 was added consistent with the CTS allowances pertaining to CTS 4.7.7.1 and 4.7.8.1.

This change is acceptable since it is a clarification needed to maintain provisions that would be allowed in the LCO sections of the Technical Specifications and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.18 Not used.

A.19 CTS 4.7.7.1 and CTS 4.7.8.1 require certain ventilation filter testing following painting, fire, or chemical release in any ventilation zone communicating with the subsystems. For the CREVS, ITS 5.5.7 only requires testing if the painting, fire, or chemical release is "significant" and when it is in the vicinity of control room outside air intakes while the system is operating. For SLCRS, ITS 5.5.7 only requires testing if the painting, fire, or chemical release is "significant" and when it is in any ventilation zone communicating with the system while the "filtration" system is operating. This changes the CTS by clarifying these ventilation filter tests are required to be performed following "significant" painting, fire, or chemical releases.

Current BVPS Units 1 and 2 practice is that not all painting, fire, or chemical release results in the need to perform certain ventilation filter tests. Only painting, fire, or chemical release that could affect the ventilation filter subsystems, i.e., that which is significant and is in a ventilation zone that communicates with the system while the filtration system is operating (SLCRS) or when in the vicinity of control room outside air intakes while the system is operating (CREVS), would require performance of the tests. The word "significant" was added for clarity and consistency with current practice to avoid a misinterpretation that any painting, fire, or chemical release (such as using a small can of paint to do touch-up work in an affected ventilation zone) would result in the need to perform the tests. Similarly, the wording "while the system is operating (CREVS) and "while the filtration system is operating (SLCRS)" was added to clarify that this is the time when the painting, fire, or chemical release could affect the ventilation filter subsystems. The SLCRS statement was clarified using the word "filtration system" since the Unit 1 system can be operated bypassing the system filters. This clarification is administrative, and is consistent with the most recently approved BWR/5 ITS Amendment, WNP-2. In addition, the NRC, in a letter to Entergy Operations dated September 11, 1997, supported the clarification that not all painting, fires, or chemical releases required the ventilation filter subsystems to be tested. This change is acceptable since it is a clarification and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.20 Unit 1 CTS 4.7.7.1.c and 4.7.7.2 provides in-place testing requirements for the Unit 1 Control Room Emergency Ventilation System and the Unit 2 Control Room Emergency Ventilation System when used to satisfy the Unit 1 LCO . The CTS groups both the HEPA filter and charcoal filter in-place testing surveillance requirements into one surveillance with one acceptance criteria for penetration and bypass leakage. ITS 5.5.7.a and 5.5.7.b provide separate surveillance requirements for the in-place testing requirement of the HEPA filter and for the in-place testing requirement of the charcoal adsorber. This changes the CTS by dividing the current in-place testing requirements, including acceptance criteria, into two separate requirements.

This change is acceptable since it includes no new requirements, but only involves a presentation difference. The change does not result in technical changes and is designated as administrative.

BVPS UNITS 1 & 2
ITS CONVERSION LICENSE AMENDMENT REQUEST (LAR)
Nos. 296 (UNIT 1) & 169 (UNIT 2)

REVISION 3

CHANGE 7

Affected BVPS ITS

None

Description

This change provides updated pages to Volume 1, Review Information of the original BVPS Improved Technical Specification (ITS) Conversion submittal. Volume 1 of the BVPS ITS Conversion submittal contains information to aid in the review of the submittal. Specifically this change includes updated pages for the License Amendment Request (LAR) Status, the Current Technical Specification (CTS) Roadmap, and the Improved Standard Technical Specification (ISTS) Roadmap sections of Volume 1. This change does not affect the proposed BVPS ITS or CTS and is provided as a reviewer aide only.

Affected Pages:

Each affected Volume 1 section is provided in its entirety. To update Volume 1 of the BVPS ITS Conversion submittal, replace the entire existing Volume 1 section with the corresponding Revision 3 section. The following Volume 1 sections are updated for Revision 3:

LAR Status
CTS Roadmap
ISTS Roadmap

BVPS ITS CONVERSION PROJECT
OUTSTANDING LICENSE AMENDMENT REQUEST (LAR) STATUS

The approval for all of the following outstanding LARs has been requested prior to the approval of the BVPS Improved Technical Specification (ITS) conversion LAR. Therefore, the changes proposed in each of the following LARs have been incorporated into the BVPS Current Technical Specifications (CTS) used in the ITS conversion documentation. The proposed changes from the LARs are incorporated directly into the affected CTS (i.e., not marked-up on the CTS). The ITS conversion documentation assumes approval of each outstanding LAR as submitted.

Each CTS page in the ITS conversion documentation affected by one or more of the following LARs is clearly marked (in the upper right hand corner) as a "Draft Page" from the applicable LAR(s). Following NRC approval of the outstanding LARs, the ITS conversion LAR will be supplemented by letter. In the supplemental letter(s), the "Draft" CTS pages used in the ITS LAR will either be confirmed as approved or replaced by CTS pages with the required changes to make the ITS conversion LAR documentation conform to the final NRC approved BVPS license amendments.

An electronic copy of each LAR listed below is available (separately on CD). **In Attachment A to each outstanding LAR (A-1 for Unit 1 and A-2 for Unit 2) a list of affected pages and detailed markups of those pages are provided.** The following list of LARs is only intended to provide an overview and brief description of the outstanding LARs.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
	184	Unit 2 Response Time Testing. Allows response time to be verified by other means than performing a test. Includes a bases change. LAR is consistent with the guidance provided in WCAP-13632-P-A and WCAP-14036-P-A Submitted by letter dated July 23, 2004. **LAR No.184 was approved by the NRC in Unit 2 license amendment No. 147 issued March 24, 2005 (TAC No. MC3894).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
306	176	Emergency Diesel Generator Allowed Outage Time extension to 14 days. A risk informed LAR. Submitted by letter dated May 26, 2004. **LAR Nos. 306 and 176 were approved by the NRC in license amendment Nos. 268 (Unit 1) and 150 (Unit 2) issued September 29, 2005 (TAC Nos. MC3331 and MC3332).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
309	181	Channel Functional Test Surveillance interval extension for undervoltage relays and RWST level. Based on the NRC approved methodology in WCAP-10271. Submitted by letter dated June 2, 2004. **LAR Nos. 309 and 181 were approved by the NRC in license amendment Nos. 267 (Unit 1) and 149 (Unit 2) issued September 19, 2005 (TAC Nos. MC3404 and MC3405).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
326	177	Unit 2 Capsule W & Overpressure Protection System changes. Also improves consistency of TS requirements for low temperature overpressure protection between units and with the ISTS. Submitted by letter dated June 1, 2004. **LAR Nos. 326 and 177 were approved by the NRC in license amendment Nos. 265 (Unit 1) and 146 (Unit 2) issued March 11, 2005 (TAC Nos. MC3375 and MC3376).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
329	198	Deletion of Monthly Operating Report & Occupational Radiation Exposure Report (TST-369 CLIIP) Submitted by letter dated February 22, 2005. **LAR Nos. 329 and 198 were approved by the NRC in license amendment Nos. 266 (Unit 1) and 148 (Unit 2) issued July 28, 2005 (TAC Nos. MC6176 and MC 6177).**	Approved changes incorporated and pages updated with new amendment number in Revision 1.
314	187	Post Accident Monitoring Instrumentation (PAM) Revision. Update PAM instrumentation requirements consistent with guidance of WCAP-15981, Post Accident Monitoring Instrumentation Re-Definition for Westinghouse NSSS Plants." The WCAP was submitted to the NRC 9/17/04. Submitted by letter dated February 22, 2005. **LARs 314 and 187 were withdrawn by FENOC letter dated May 11, 2005.**	Affected ITS conversion documentation revised to reflect withdrawal of LARs 314 and 187 in Revision 1.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
302	173	Extended Power Uprate. 2689 MWt to 2900 MWt rated Thermal Power. Note: Some Unit 1 changes from this LAR were incorporated into a separate Unit 1 LAR (#320) to support the Unit 1 Replacement SG effort. See separate listing for Unit 1 LAR # 320. This LAR includes the elimination of the Unit 1 TS (3.5.4.1.1) that addresses Boron Injection Tank (BIT) volume and boron concentration requirements applicable in Modes 1-3. Therefore, this Unit 1 TS is not shown in the BVPS conversion documentation for Section 3.5. Unit 2 does not have a corresponding BIT TS. Submitted by letter dated October 4, 2004.	Draft pages incorporated.
310	182	Constant Axial Offset Control (CAOC) to Relaxed Axial Offset Control (RAOC). Also incorporates changes to conform more closely to corresponding ISTS requirements. Submitted by letter dated February 11, 2005. **LAR Nos. 310 and 182 were approved by the NRC in license amendment Nos. 274 (Unit 1) and 155 (Unit 2) issued February 27, 2006 (TAC Nos. MC5904 and MC5905).**	Approved changes incorporated and pages updated with new amendment number in Revision 2.
317	190	Containment Atmospheric Conversion. Proposes changes to convert the subatmospheric containment TS requirements to more closely conform to atmospheric containment TS requirements. Submitted by letter dated June 2, 2004. **LAR Nos. 317 and 190 were approved by the NRC in license amendment Nos. 271 (Unit 1) and 153 (Unit 2) issued February 6, 2006 (TAC Nos. MC3394 and MC3395).**	Approved changes incorporated and pages updated with new amendment number in Revision 2.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
318	191	Best Estimate Loss of Coolant Accident (BELOCA). Consistent with WCAP-12945-P-A. Submitted by letter dated October 4, 2004. **LAR Nos. 318 and 191 were approved by the NRC in license amendment Nos. 272 (Unit 1) and 154 (Unit 2) issued February 6, 2006 (TAC Nos. MC4647 and MC4648).**	Approved changes incorporated and pages updated with new amendment number in Revision 2.
325	195	Control Room Emergency Ventilation System (CREVS) Revision of current requirements to make the BVPS requirements consistent between Units and to conform more closely to the corresponding ISTS (Rev. 3) requirements. Adds new TS 3.7.6 to address Control Room Emergency Air Cooling System (CREACS). Revises U1 Applicability for control room radiation monitors to be consistent with U2 (i.e., required for recently irradiated fuel movement instead of any irradiated fuel movement). Submitted by FENOC letter **L-05-15** dated February 17, 2005 as supplemented by FENOC Letter **L-06-076** dated 5/12/06.	Draft pages incorporated.
327	197	Revise Unit 1 & 2 SG Low Level Reactor Trip and ESFAS Allowable values and Unit 2 ESFAS SG level high allowable value. The pages containing the Unit 1 SG Low Level value changed by this LAR are superceded by value used in the Replacement SG LAR (#320). Submitted by letter dated October 5, 2004. **LAR Nos. 327 and 197 were approved by the NRC in license amendment Nos. 270 (Unit 1) and 152 (Unit 2) issued January 11, 2006 (TAC Nos. MC4649 and MC4650).**	Approved changes incorporated and pages updated with new amendment number in Revision 2.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
	202	This change eliminates the Technical Specification references to the Unit 2 rectifiers. The resulting Technical Specifications will only refer to battery chargers instead of both rectifiers and chargers. Submitted by letter dated October 14, 2005 and approval has been requested prior to the implementation of the BVPS ITS conversion License Amendment.	Draft pages incorporated.
320		The BVPS Unit 1 LAR # 320 proposed changes to support the replacement Steam Generators (RSG). LAR # 320 contains changes previously submitted in Unit 1 LAR # 302 for the extended power uprate (EPU). Submitted by letter dated April 13, 2005. **Unit 1 LAR No. 320 was approved by the NRC in Unit 1 license amendment No. 273 issued February 9, 2006 (TAC No. MC6725.** This Amendment includes Unit 1 changes that were previously identified as part of the Extended Power Uprate LAR (LAR # 302) in the ITS conversion submittal documentation.	Approved changes incorporated and pages updated with new amendment number in Revision 2.
	173	**Supplement** to Unit 2 Extended Power Uprate LAR (# 173). The revisions in this supplement raise the minimum Accumulator nitrogen cover pressure to 611 psig, delete the percent indicated level from the accumulator volume requirements, and insert "usable" in the LCO statement for accumulator volume (to match the existing SR text). The corresponding Unit 1 change was approved in the Replacement SG Amendment # 273 issued 2/9/06 (see Unit 1 LAR # 320). Submitted by FENOC letter **L-05-168** dated 10/28/05.	Draft pages incorporated.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
	173	**Supplement** to Unit 2 Extended Power Uprate LAR (# 173). Although this supplement does not revise any technical specifications it does include a technical specification Bases change for the AFW System. The Bases addition justifies the 72 hour time allowed for one inoperable AFW pump (i.e., how the AFW System flow requirements are met with a single inoperable AFW pump. The corresponding Unit 1 bases change was approved in the RSG Amendment # 273 (see Unit 1 LAR # 320). Submitted by FENOC letter **L-05-198** dated 12/16/05.	Draft pages incorporated.
324	196	This LAR Implements TSTF-449. TSTF 449 revises the definition of Leakage, introduces a new ITS LCO (3.4.20) in Section 3.4 titled Steam Generator Tube Integrity, revises ITS 3.4.13, Operational Leakage, revises Specification 5.5.5, SG Tube Surveillance Program, and Revises 5.6.6, SG Tube Inspection Report. This LAR is expected to be approved prior to the approval of the BVPS ITS. Submitted by FENOC Letter **L-05-144** dated 11/7/05 as supplemented by FENOC Letter **L-06-88** dated 6/1/06. Note F* requirements from U2 LAR No. 183 must be incorporated into new 5.5.5, SG Tube Inspection Program.	Draft pages incorporated.

Unit 1 LAR #	Unit 2 LAR #	LAR Description and Status	ISTS Conversion Documentation Status
	183	Implements F* Tube plugging criteria for U2 SG tubes with degradation in the tubesheet roll expansion region (WCAP-16385-NP, Rev. 1). The changes affect the SG Tube Inspection Program requirements in Section 5.0 of the BVPS ITS. Submitted by FENOC Letter **L-05-061** dated 4/11/05 as supplemented by FENOC Letter **L-06-013** dated 1/27/06. NOTE: This LAR must be incorporated into the changes resulting from U2 LAR 196 (new SG Tube Inspection Program in Section 5.0 of the ITS).	Draft pages incorporated.

BVPS UNIT 1 AND UNIT 2
CURRENT TECHNICAL SPECIFICATIONS (CTS) ROADMAP
LISTED IN CTS ORDER

NOTES:

1. Each CTS and BVPS Improved Technical Specification (ITS) listed below is common to both units unless identified as unit specific.
2. Unit 1 CTS pages are only included in the CTS markups when a technical difference exists between the Unit 1 page and the Unit 2 page.
3. Each marked-up CTS page in the submittal affected by an outstanding License Amendment Request (LAR) is clearly identified as a draft page with the applicable LAR number(s) referenced.

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Defined Terms	Section 1.1 Note	Retained in ITS Section 1.1 as a Note.	
Thermal Power	Thermal Power		
Rated Thermal Power	Rated Thermal Power		**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
Operational Mode	Mode		
Action	Actions		
Operable - Operability	Operable - Operability		
Reportable Event	N/A	Not used in ITS.	
Containment Integrity	N/A	Not used in ITS.	
Channel Calibration	Channel Calibration		
Channel Check	Channel Check		
Channel Functional Test	Channel Operational Test & Trip Actuating Device Operational Test		
Core Alteration	Core Alteration		

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Shutdown Margin	Shutdown Margin		
Leakage	Leakage		**Draft pages** utilized from LAR #s 324 (Unit 1) and 196 (Unit 2).
Quadrant Power Tilt Ratio	Quadrant Power Tilt Ratio		
Dose Equivalent I-131	Dose Equivalent I-131		
Staggered Test Basis	Staggered Test Basis		
Frequency Notation	N/A	Not used in ITS.	
Reactor Trip System Response Time	Reactor Trip System Response Time		
Engineered Safety Feature Response Time	Engineered Safety Feature Response Time		
Axial Flux Difference	Axial Flux Difference		
Physics Tests	Physics Tests		
$\bar{E}$ - Average Disintegration Energy	$\bar{E}$ - Average Disintegration Energy		
Source Check	N/A	Not used in ITS.	
Process Control Program	N/A	Not used in ITS.	
Offsite Dose Calculation Manual (ODCM)	5.5.1 Offsite Dose Calculation Manual (ODCM)	Moved to Section 5.0 of ITS.	
Gaseous Radwaste Treatment System	N/A	Not used in ITS.	
Ventilation Exhaust Treatment System	N/A	Not used in ITS.	

CTS SECTION 1.0 DEFINITIONS

CTS (1.0)	BVPS ITS (1.1)	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
Purge-Purging	N/A	Not used in ITS.	
Venting	N/A	Not used in ITS.	
Major Changes	N/A	Not used in ITS.	
Member(s) Of The Public	N/A	Not used in ITS.	
Core Operating Limits Report	Core Operating Limits Report		
Pressure And Temperature Limits Report (PTLR)	Pressure And Temperature Limits Report (PTLR)		
Table 1.1 Operational Modes	Table 1.1 Modes		
Table 1.2 Frequency Notation	N/A	Not used in ITS.	

CTS SECTION 2.1 SAFETY LIMITS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
2.1.1 Reactor Core	2.1.1 Reactor Core SLs		**Draft page** utilized from LAR # 173 (Unit 2).
2.1.2 Reactor Coolant System Pressure	2.1.2 Reactor Coolant System Pressure SL		

CTS SECTION 3/4.0 APPLICABILITY

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.0 Applicability	3.0 Limiting Condition For Operation (LCO) Applicability 3.0 Surveillance Requirement (SR)		

CTS SECTION 3/4.0 APPLICABILITY

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
	Applicability		

CTS SECTION 3/4.1 REACTIVITY CONTROL SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.1.1.1 SHUTDOWN MARGIN $-T_{avg} > 200°F$	3.1.1 Shutdown Margin 3.1.2 Core Reactivity	CTS Surveillance 4.1.1.1.2 was expanded into a separate specification for core reactivity (3.1.2) in the ITS.	
3/4.1.1.2 SHUTDOWN MARGIN - $T_{avg} \leq 200°F$	3.1.1 Shutdown Margin	Both CTS Shutdown Margin specifications are combined in a single ITS 3.1.1.	
3/4.1.1.3 Boron Dilution	N/A	**Relocated** to the Licensing Requirements Manual (LRM).	
3/4.1.1.4 Moderator Temperature Coefficient (MTC)	3.1.3 Moderator Temperature Coefficient (MTC)		
3/4.1.1.5 Minimum Temperature for Criticality	3.4.2 RCS Minimum Temperature for Criticality	CTS moved to Section 3.4 (RCS) in the ITS. Changes to the CTS are shown in Section 3.4.	
3/4.1.2.8 Refueling Water Storage Tank	3.5.4 Refueling Water Storage Tank (RWST)	CTS moved to Section 3.5 (ECCS) in the ITS. Changes to the CTS are shown in Section 3.5.	**Draft page** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.1.2.9 Isolation of Unborated Water Sources - Shutdown	3.1.8 Unborated Water Source Isolation Valves	BVPS specific CTS applicable in Modes 4, 5 and 6. The proposed ITS is based on ISTS 3.9.2, Unborated Water Source Isolation Valves but retained in Section 3.1 consistent with the CTS since it is applicable in Modes other than Mode 6.	
3/4.1.3.1 Group Height	3.1.4 *Rod Group Alignment Limits*		
3/4.1.3.2 Position Indication Systems - Operating	3.1.7.1 **Unit 1** Rod Position Indication	Due to design differences (Unit 1 Analog System and Unit 2 Digital System) and other CTS differences, separate unit specific specifications are proposed.	

CTS SECTION 3/4.1 REACTIVITY CONTROL SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
	3.1.7.2 **Unit 2** Rod Position Indication		
3/4.1.3.4 Rod Drop Time	3.1.4 Rod Group Alignment Limits	CTS requirements incorporated into ITS 3.1.4 as SR 3.1.4.3.	
3/4.1.3.5 Shutdown Rod Insertion Limit	3.1.5 Shutdown Bank Insertion Limits		
3/4.1.3.6 Control Rod Insertion Limit	3.1.6 Control Bank Insertion Limits		

CTS SECTION 3/4.2 POWER DISTRIBUTION LIMITS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.2.1 Axial Flux Difference (AFD)	3.2.3 Axial Flux Difference (AFD)		
3/4.2.2 Heat Flux Hot Channel Factor F_Q (Z)	3.2.1 Heat Flux Hot Channel Factor ($F_Q(Z)$)		
3/4.2.3 Nuclear Enthalpy Hot Channel Factor ($F^N_{\Delta H}$)	3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)		
3/4.2.4 Quadrant Power Tilt Ratio	3.2.4 Quadrant Power Tilt Ratio (QPTR)		
3/4.2.5 DNB Parameters	3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	CTS moved to Section 3.4 (RCS) in the ITS. Changes to the CTS are shown in Section 3.4.	

CTS SECTION 3/4.3 INSTRUMENTATION

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.3.1 Reactor Trip System Instrumentation	3.3.1 RTS Instrumentation 3.3.8 Boron Dilution Detection Instrumentation	The RTS requirements are in Section 3.3A of the BVPS conversion documentation. Source Range Indication only requirements moved to ITS 3.3.8 in Section 3.3B of BVPS conversion documentation. Changes to the Source Range Indication requirements are shown in Section 3.3B.	**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.3.2 Engineered Safety Feature Actuation System Instrumentation	3.3.2 ESFAS Instrumentation 3.3.5 Loss of Power LOP DG Start and Bus Separation Instrumentation	Section 3.3C of BVPS conversion documentation. ESF bus undervoltage relays moved to ITS 3.3.5 in Section 3.3B of the conversion documentation.	**Draft pages** utilized from LAR # 302 (Unit 1)
3/4.3.3.1 Radiation Monitoring	3.3.6 **Unit 2** ITS 3.3.6 Containment Purge and Exhaust Isolation Instrumentation ITS 3.3.7, Control Room Emergency Ventilation System (CREVS) Instrumentation ITS 3.4.15, RCS Leakage Detection Instrumentation	Section 3.3B of BVPS conversion documentation. **Unit 1** requirements for the Containment Purge and Exhaust Isolation Radiation Monitors are **Relocated** to the Unit 1 LRM.	**Draft pages** utilized from LAR # 325 (Unit 1).
3/4.3.3.5 Remote Shutdown Instrumentation	3.3.4 Remote Shutdown Instrumentation	Section 3.3B of BVPS conversion documentation.	
3/4.3.3.8 Post Accident Monitoring (PAM) Instrumentation	3.3.3 Post Accident Monitoring (PAM) Instrumentation	Section 3.3B of BVPS conversion documentation.	

CTS SECTION 3/4.4 REACTOR COOLANT SYSTEM (RCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.4.1.1 RCS Loops - Normal Operation	3.4.4 RCS Loops - Modes 1 and 2		
3/4.4.1.2 RCS Loops - Hot Standby	3.4.5 RCS Loops - Mode 3		
3/4.4.1.3 RCS Loops - Shutdown	3.4.6 RCS Loops - Mode 4 3.4.7 RCS Loops Mode 5, Loops Filled 3.4.8 RCS Loops Mode 5, Loops Not Filled		
3/4.4.1.4.1 Loop Isolation Valves - Operating	3.4.17 RCS Loop Isolation Valves		
3/4.4.1.5 Isolated Loop Startup	3.4.18 RCS Isolated Loop Startup		
3/4.4.3 Safety Valves	3.4.10 Pressurizer Safety Valves		**Draft pages** utilized from Unit 2 LAR # 173. **Draft page** utilized from Unit 1 LAR # 302.
3/4.4.4 Pressurizer	3.4.9 Pressurizer		
3/4.4.5 Steam Generator Tube Integrity	3.4.20 Steam Generator Tube Integrity		**Draft pages** utilized from LAR #s 324 (Unit 1) & 196 (Unit 2)
3/4.4.6.1 Leakage Detection Instrumentation	3.4.15 RCS Leakage Detection Instrumentation	Applicable pages from 3/4.3.3.1 Radiation Monitoring (as modified by Unit 2 LAR 187) are included in Section 3.4 to show addition of Rad Monitors.	
3/4.4.6.2 Operational Leakage	3.4.13 RCS Operational Leakage		**Draft pages** utilized from LAR #s 324 (Unit 1) & 196 (Unit 2).

CTS SECTION 3/4.4 REACTOR COOLANT SYSTEM (RCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.4.6.3 Pressure Isolation Valves	3.4.14 RCS Pressure Isolation Valve (PIV) Leakage		
3/4.4.8 Specific Activity	3.4.16 RCS Specific Activity	Unit 1 LAR # 302 makes the Unit 1 specific activity limit the same as Unit 2. Therefore, with no other difference, the Unit 1 pages are not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.4.9.1 RCS Pressure Temperature Limits	3.4.3 RCS Pressure and Temperature (P/T) Limits		
3/4.4.9.3 Overpressure Protection Systems	3.4.12 Overpressure Protection Systems (OPPS)		
3/4.4.11 Relief Valves	3.4.11 Pressurizer Power Operated Relief Valves (PORVs)		

CTS SECTION 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.5.1 Accumulators	3.5.1 Accumulators		**Draft pages** utilized from LAR # 173 (Unit 2).
3/4.5.2 ECCS Subsystems - $T_{avg} \geq 350°F$	3.5.2 ECCS - Operating		**Draft pages** from Unit 1 LAR # 302.
3/4.5.3 ECCS Subsystems - $T_{avg} < 350°F$	3.5.3 ECCS - Shutdown		**Draft pages** from Unit 1 LAR # 302.

CTS SECTION 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.5.4 Seal Injection Flow **(Unit 2)**	3.5.5 Seal Injection Flow		**Draft pages** from Unit 2 LAR # 173.
3/4.5.4.1.1 Boron Injection Tank ≥ 350°F **(Unit 1)**	N/A	This Unit 1CTS is deleted in uprate LAR # 302. Therefore, this CTS is not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.5.1.2 Boron Injection Tank < 350°F **(Unit 1)**	3.4.12 Overpressure Protection System (OPPS)	Unit 1 LAR # 302 revises and renames the CTS to "3/4.5.4 HHSI Flow Path." As the requirements of this Unit 1 CTS are for low temperature overpressure protection, the requirements are moved to ITS 3.4.12. Changes to the CTS are shown in Section 3.4.	**Draft pages** from Unit 1 LAR # 302.
3/4.5.5 Seal Injection Flow **(Unit 1)**	3.5.5 Seal Injection Flow	Uprate LAR #s 302 (Unit 1) and 173 (Unit 2) make the Unit 1 and Unit 2 CTS requirements for Seal Injection Flow the same. Therefore, this Unit 1 CTS is not included in the BVPS conversion documentation.	

CTS SECTION 3/4.6 CONTAINMENT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.6.1.1 Containment Integrity	3.6.1 Containment	CTS valve surveillance moved to ITS 3.6.3.	
3/4.6.1.2 Containment Leakage	N/A	CTS replaced by requirements in ITS 3.6.1 and the containment leakage rate testing program.	
3/4.6.1.3 Containment Air Locks	3.6.2 Containment Air Locks	CTS requirements for air lock door leakage moved into ITS 5.5.12, "Containment Leakage Rate Testing Program." Changes to these requirements are shown in Section 5.0 of the conversion documentation.	

CTS SECTION 3/4.6 CONTAINMENT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.6.1.4 Internal Pressure	3.6.4 Containment Pressure	Although BVPS was originally designed with a subatmospheric containment, LAR #s 317/190 make the temperature and pressure requirements close to an atmospheric containment. Therefore, the ISTS atmospheric temperature and pressure requirements were selected for the BVPS specific ITS.	
3/4.6.1.5 Air Temperature	3.6.5 Containment Air Temperature	Although BVPS was originally designed with a subatmospheric containment, LAR #s 317/190 make the temperature and pressure requirements close to an atmospheric containment. Therefore, the ISTS atmospheric temperature and pressure requirements were selected for the BVPS specific ITS.	
3/4.6.1.6 Containment *Structural Integrity*	N/A	CTS replaced by requirements in ITS 3.6.1 and the containment leakage rate testing program.	
3/4.6.2.1 Containment Quench Spray System	3.6.6 Quench Spray System		
3/4.6.2.2 Containment Recirculation Spray System	3.6.7 Recirculation Spray System		
3/4.6.2.3 Chemical Addition System	3.6.8 Spray Additive System		
3/4.6.3 Containment Isolation Valves	3.6.3 Containment Isolation Valves		

CTS SECTION 3/4.7 PLANT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.7.1.1 Main Steam Safety Valves (MSSVs)	3.7.1 Main Steam Safety Valves (MSSVs)		**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.7.1.2 Auxiliary Feedwater System	3.7.5 Auxiliary Feedwater (AFW) System		
3/4.7.1.3 Primary Plant Demineralized Water (PPDW)	3.7.6 Primary Plant Demineralized Water Storage Tank (PPDWST)		**Draft pages** utilized from LAR #s 302 (Unit 1) and 173 (Unit 2).
3/4.7.1.4 Activity	3.7.13 Secondary Specific Activity	Unit 1 LAR # 302 makes the Unit 1 specific activity limit the same as Unit 2. Therefore, with no other difference, the Unit 1 pages are not included in the BVPS conversion documentation.	Unit 1 LAR # 302.
3/4.7.1.5 Main Steam Isolation Valves	3.7.2 Main Steam Isolation Valves (MSIVs)		
3/4.7.3 Component Cooling Water System (Unit 1) 3/4.7.3 Primary Component Cooling Water System (Unit 2)	3.7.7 Component Cooling Water (CCW) System		
3/4.7.4 Reactor Plant River Water System (Unit 1) 3/4.7.4 Service Water System (Unit 2)	3.7.8 Service Water System (SWS)		
3/4.7.5 Ultimate Heat Sink - Ohio River	3.7.9 Ultimate Heat Sink (UHS)		
3/4.7.6 Control Room Emergency Air Cooling System (CREACS)	3.7.11 Control Room Emergency Air Cooling System (CREACS)		**Draft pages** utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).
3/4.7.7 Control Room Emergency Ventilation System	3.7.10 Control Room Emergency Ventilation System (CREVS)		**Draft pages** utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).

CTS SECTION 3/4.7 PLANT SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
(CREVS)			
3/4.7.8 Supplemental Leak Collection and Release System (SLCRS)	N/A	This CTS is applicable in Modes 1-4 and is **Relocated** to the Licensing Requirements Manual (LRM). SLCRS requirements for fuel movement involving recently irradiated fuel are retained in ITS 3.7.12, "SLCRS" consistent with CTS 3.9.12.	

CTS SECTION 3/4.8 ELECTRICAL POWER SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.8.1.1 AC Sources Operating	3.8.1 AC Sources Operating 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air 5.5.9 Diesel Fuel Oil Testing Program		
3/4.8.1.2 AC Sources Shutdown	3.8.2 AC Sources Shutdown		
3/4.8.2.1 AC Distribution Operating	3.8.7 Inverters Operating 3.8.9 Distribution Systems Operating		
3/4.8.2.2 AC Distribution Shutdown	3.8.8 Inverters Shutdown 3.8.10 Distribution Systems Shutdown		
3/4.8.2.3 DC Distribution Operating	3.8.4 DC Sources Operating 3.8.6 Battery Cell Parameters 3.8.9 Distribution Systems		**Draft pages** utilized from Unit 2 LAR # 202

CTS SECTION 3/4.8 ELECTRICAL POWER SYSTEMS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
	Operating		
3/4.8.2.4 DC Distribution Shutdown	3.8.5 DC Sources Shutdown 3.8.10 Distribution Systems Shutdown		**Draft pages** utilized from Unit 2 LAR # 202

CTS SECTION 3/4.9 REFUELING OPERATIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.9.1 Boron Concentration	3.9.1 Boron Concentration		
3/4.9.2 Instrumentation	3.9.2 Nuclear Instrumentation		
3/4.9.3 Decay Time	N/A	Moved from the CTS to the LRM by an LA DOC.	
3/4.9.4 Containment Building Penetrations	3.9.3 Containment Penetrations		
3/4.9.8.1 RHR and Coolant Circulation	3.9.4 RHR and Coolant Circulation – High Water Level		
3/4.9.8.2 RHR and Coolant Circulation Low Water Level	3.9.5 RHR and Coolant Circulation – Low Water Level		
3/4.9.9 Containment Purge and Exhaust Isolation System	3.3.6 **Unit 2** Purge and Exhaust Isolation Instrumentation, 3.9.3 Containment Penetrations (for Unit 2 valve actuation surveillances)	**Unit 2** valve actuation surveillance requirements retained in ITS 3.9.3, "Containment Penetrations." Remainder of CTS 3/4.9.9 moved to Instrumentation Section 3.3B in the BVPS conversion documentation. All **Unit 1** CTS 3/4.9.9 requirements **Relocated** to the LRM. All changes to CTS 3/4.9.9 except for the Unit 2 Valve actuation requirements moving to ITS 3.9.3 are	

CTS SECTION 3/4.9 REFUELING OPERATIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
		shown in Section 3.3B.	
3/4.9.10 Water Level Reactor Vessel	3.9.6 Refueling Cavity Water Level		
3/4.9.11 Storage Pool Water Level	3.7.15 Fuel Storage Pool Water Level	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7.	
3/4.9.12 Fuel Building Ventilation Fuel Movement	3.7.12 Supplemental Leak Collection and Release System (SLCRS)	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7.	
3/4.9.14 Spent Fuel Storage Pool **(Unit 1)** 3/4.9.14 Spent Fuel Pool Storage **(Unit 2)**	3.7.14 Spent Fuel Pool Storage	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7. Requirements of **Unit 1** CTS 3/4.9.14 are divided between ITS 3.7.14 and ITS 3.7.16.	
3/4.9.14 Spent Fuel Storage Pool **(Unit 1)** 3/4.9.15 Fuel Storage Pool Boron Concentration **(Unit 2)**	3.7.16 Fuel Storage Pool Boron Concentration	Moved to Section 3.7 of the conversion documentation. All changes to CTS shown in Section 3.7. Requirements of **Unit 1** CTS 3/4.9.14 are divided between ITS 3.7.14 and ITS 3.7.16.	

CTS SECTION 3/4.10 SPECIAL TEST EXCEPTIONS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
3/4.10.1 Shutdown Margin	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.2 Group Height, Insertion and Power Distribution Limits	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.3 Pressure/Temperature Limitation Reactor Criticality **(Unit 1)**	N/A	Not in ISTS. Deleted From CTS. Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.3 Physics Tests **(Unit 2)** 3/4.10.4 Physics Tests **(Unit 1)**	3.1.9 PHYSICS TESTS Exceptions – Mode 2	Addressed in Section 3.1 of BVPS conversion documentation.	
3/4.10.4 Reactor Coolant Loops **(Unit 2)** 3/4.10.5 No Flow Tests **(Unit 1)**	3.4.19 RCS Loops - Test Exceptions	Addressed in Section 3.4 of BVPS conversion documentation.	

CTS SECTION 5.0 DESIGN FEATURES

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
5.1 Site Location	4.1 Site Location		
5.2 Reactor Core	4.2 Reactor Core		
5.3 Fuel Storage	4.3 Fuel Storage		

ITS SECTION 6.0 ADMINISTRATIVE CONTROLS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
6.1 Responsibility	5.1 Responsibility		
6.2.1 Onsite and Offsite Organizations	5.2.1 Onsite and Offsite Organizations		
6.2.2 Unit Staff	5.2.2 Unit Staff		
6.3 Facility Staff Qualifications	5.3.1 Facility Staff Qualifications		
6.4 & 6.5 Deleted	N/A		
6.6 Reportable Event Action	N/A	Deleted	
6.7 Deleted	N/A		
6.8 Procedures	5.4 Procedures 5.5 Programs and Manuals	Many subsections of CTS 6.8 are moved into new ITS Section 5.5 for Programs. CTS requirements moved into ITS Section 5.5 from Section 3.7 for the Ventilation Filter Test Program are affected by LARs.	**Draft pages** utilized from LAR # 173 (Unit 2). **Draft pages** utilized from LAR #s 325 (Unit 1) and 195 (Unit 2).
6.9.1 Deleted	N/A		
6.9.2 Annual Radiological Environmental Operating Report	5.6.1 Annual Radiological Environmental Operating Report		
6.9.3 Annual Radioactive Effluent Release Report	5.6.2 Radioactive Effluent Release Report		
6.9.4 Deleted	N/A		
6.9.5 Core Operating Limits Report (COLR)	5.6.3 Core Operating Limits Report (COLR)		**Draft pages** utilized from LAR # 173 (Unit 2)
6.9.6 Pressure Temperature Limits Report (PTLR)	5.6.4 Reactor Coolant System (RCS) Pressure Temperature Limits Report (PTLR)		

ITS SECTION 6.0 ADMINISTRATIVE CONTROLS

CTS	BVPS ITS	NOTES	APPLICABLE LICENSE AMENDMENT REQUESTS
6.9.7 Steam Generator Tube Inspection Report	5.6.6 Steam Generator Tube Inspection Report		**Draft pages** utilized from LAR #s 324 (Unit 1) & 196 (Unit 2) & 183 (Unit 2).
6.10 Deleted	N/A		
6.11 Radiation Protection Program	N/A	CTS requirements moved to UFSAR.	
6.12 High Radiation Area	5.7 High Radiation Area		
6.13 Process Control Program (PCP)	N/A	CTS requirements moved to UFSAR.	
6.14 Offsite Dose Calculation Manual (ODCM)	5.5.1 Offsite Dose Calculation Manual (ODCM)		
6.15 & 6.16	N/A	CTS # 6.15 is not used and CTS 6.16 only refers to being moved to the PCP (CTS 6.13)	
6.17 Containment Leakage Rate Testing Program	5.5.12 Containment Leakage Rate Testing Program		
6.18 Technical Specifications (TS) Bases Control Program	5.5.10 Technical Specifications (TS) Bases Control Program		
6.19 Steam Generator Program	5.5.5 Steam Generator Program		**Draft pages** utilized from LAR #s 324 (Unit 1) & 196 (Unit 2) & 183 (Unit 2).

ROADMAP OF IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS)
AND CROSS-REFERENCE TO PROPOSED BVPS SPECIFIC UNIT 1 AND 2 ITS AND CURRENT TECHNICAL SPECIFICATIONS (CTS)
LISTED IN ISTS ORDER

Each BVPS Improved Technical Specification (ITS) and CTS listed below is common to both units unless identified as unit specific.

SECTION 1.0 USE & APPLICATION

ISTS	BVPS ITS	CTS	NOTES
1.0 Use and Application	1.0 Use and Application	N/A	New Section added to CTS.
1.1 Definitions	1.1 Definitions	1.0 Definitions	
1.2 Logical Connectors	1.2 Logical Connectors	N/A	New Section added to CTS.
1.3 Completion Time	1.3 Completion Time	N/A	New Section added to CTS.
1.4 Frequency	1.4 Frequency	N/A	New Section added to CTS.

SECTION 2.0 SAFETY LIMITS

ISTS	BVPS ITS	CTS	NOTES
2.1 Safety Limits	2.1 Safety Limits	2.1 Safety Limits	
2.2 SL Violations	2.2 SL Violations	2.1 Safety Limits	

SECTION 3.0 LCO & SR APPLICABILITY

ISTS	BVPS ITS	CTS	NOTES
3.0 LCO & SR Applicability	3.0 LCO & SR Applicability	3/4.0 LCO & SR Applicability	

SECTION 3.1 REACTIVITY CONTROL SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.1.1 SHUTDOWN MARGIN	3.1.1 SHUTDOWN MARGIN	3.1.1.1 SHUTDOWN MARGIN – Tavg > 200°F 3.1.1.2 SHUTDOWN MARGIN – Tavg ≤ 200°F	
3.1.2 Core Reactivity	3.1.2 Core Reactivity	N/A	New ITS 3.1.2 "Core Reactivity" is created from CTS surveillance 4.1.1.1.2 which verifies core reactivity.
3.1.3 Moderator Temperature Coefficient	3.1.3 Moderator Temperature Coefficient	3.1.1.4 Moderator Temperature Coefficient	
3.1.4 Rod Group Alignment Limits	3.1.4 Rod Group Alignment Limits	3.1.3.1 Movable Control Assemblies Group Height	
3.1.5 Shutdown Bank Insertion Limits	3.1.5 Shutdown Bank Insertion Limits	3.1.3.5 Shutdown Rod Insertion Limit	
3.1.6 Control Bank Insertion Limits	3.1.6 Control Bank Insertion Limits	3.1.3.6 Control Rod Insertion Limits	
3.1.7 Rod Position Indication	3.1.7.1 Unit 1 Rod Position Indication 3.1.7.2 Unit 2 Rod Position Indication	3.1.3.2 Position Indication Systems - Operating	Separate Rod Position Indication Specifications are proposed for Unit 1 and Unit 2. Unit 1 has an Analog Position Indication System and Unit 2 has a Digital Position Indication System. The CTS Specification requirements for each system are substantially different. The proposed ITS requirements for each unit, although more similar than the CTS, are still different enough to warrant separate Specifications for improved clarity.
N/A	3.1.8 Unborated Water Source Isolation Valves	3.1.2.9 Isolation of Unborated Water Sources - Shutdown	BVPS Specific 3.1 Specification. ISTS Section 3.1 does not have a Specification that corresponds to CTS 3.1.2.9 "Isolation of Unborated Water Sources – Shutdown". The proposed BVPS ITS 3.1.8 is based on the similar Mode 6 ISTS Specification 3.9.2. Since the BVPS version of this TS is applicable in more than just

SECTION 3.1 REACTIVITY CONTROL SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
			Mode 6 it is retained in Section 3.1 consistent with the CTS instead of Section 3.9 like the ISTS.
3.1.8 PHYSICS TESTS Exceptions – Mode 2	3.1.9 PHYSICS TESTS Exceptions – Mode 2	3.10.4 Physics Tests (Unit 1) 3.10.3 Physics Tests (Unit 2)	
N/A	3.1.10 RCS Boron Limitations < 500°F	N/A	The BVPS ITS Section 3.1 is revised by the addition of a new Technical Specification (3.1.10, RCS Boron Limitations < 500 °F). The addition of this new specification is consistent with the Westinghouse Owners Group (WOG) TSTF-453. TSTF-453 was developed to address issues in Westinghouse Nuclear Safety Advisory Letter (NSAL)-00-016. NSAL-00-016 discussed the reactor trip functions associated with the mitigation of an Uncontrolled Rod Cluster Control Assembly (RCCA) Bank Withdrawal from a Low Power or Subcritical Condition event (RWFS). The proposed specification provides additional protection at low RCS temperatures when the power range instrumentation may not be operable.

SECTION 3.2 POWER DISTRIBUTION LIMITS

ISTS	BVPS ITS	CTS	
3.2.1.A Heat Flux Hot Channel Factor ($F_Q(Z)$) (CAOC-F_{xy})	N/A	N/A	The ISTS contains specifications for different methodologies. The BVPS ITS utilizes the RAOC methodology specifications contained in the ISTS. Therefore, the CAOC methodology specifications are deleted from the BVPS specific implementation of Section 3.2.

SECTION 3.2 POWER DISTRIBUTION LIMITS

ISTS	BVPS ITS	CTS	
3.2.1.B Heat Flux Hot Channel Factor ($F_Q(Z)$) (RAOC-W(Z))	3.2.1 Heat Flux Hot Channel Factor ($F_Q(Z)$)	3.2.2 Heat Flux Hot Channel Factor ($F_Q(Z)$)	
3.2.1.C Heat Flux Hot Channel Factor ($F_Q(Z)$) (CAOC-W(Z))	N/A	N/A	The ISTS contains specifications for different methodologies. The BVPS ITS utilizes the RAOC methodology specifications contained in the ISTS. Therefore, the CAOC methodology specifications are deleted from the BVPS specific implementation of Section 3.2.
3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)	3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)	3.2.3 Nuclear Enthalpy Hot Channel Factor ($F^N_{\Delta H}$)	
3.2.3.A Axial Flux Difference (AFD) (CAOC)	N/A	N/A	The ISTS contains specifications for different methodologies. The BVPS ITS utilizes the RAOC methodology specifications contained in the ISTS. Therefore, the CAOC methodology specifications are deleted from the BVPS specific implementation of Section 3.2.
3.2.3.B Axial Flux Difference (AFD) (RAOC)	3.2.3 Axial Flux Difference (AFD)	3.2.1 Axial Flux Difference (AFD)	
3.2.4 Quadrant Power Tilt Ratio (QPTR)	3.2.4 Quadrant Power Tilt Ratio (QPTR)	3.2.4 Quadrant Power Tilt Ratio (QPTR)	

SECTION 3.3 INSTRUMENTATION

ISTS	BVPS ITS	CTS	NOTES
3.3.1 RTS Instrumentation	3.3.1 RTS Instrumentation	3.3.1.1 RTS Instrumentation	In Section 3.3A of Conversion documentation. Due to the size of the Instrumentation Section, it was divided into 3 separate subsections (A, B, & C).
3.3.2 ESFAS Instrumentation	3.3.2 ESFAS Instrumentation	3.3.2.1 ESFAS Instrumentation	In Section 3.3C of Conversion Documentation.

SECTION 3.3 INSTRUMENTATION

ISTS	BVPS ITS	CTS	NOTES
3.3.3 Post Accident Monitoring (PAM) Instrumentation	3.3.3 PAM Instrumentation	3.3.3.8 Accident Monitoring Instrumentation	In Section 3.3B of Conversion Documentation.
3.3.4 Remote Shutdown Instrumentation	3.3.4 Remote Shutdown Instrumentation	3.3.3.5 Remote Shutdown Instrumentation	In Section 3.3B of Conversion Documentation.
3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation	3.3.5 Loss of Power LOP DG Start and Bus Separation Instrumentation	3.3.2.1 Engineered Safety Feature System Instrumentation Function 6, Loss of Power	In Section 3.3B of Conversion Documentation.
3.3.6 Containment Purge and Exhaust Isolation Instrumentation	3.3.6 Unit 2 Containment Purge and Exhaust Isolation Instrumentation	3.9.9 Containment Purge and Exhaust Isolation 3.3.3.1 Radiation Monitoring Instrumentation Process Monitor 2.c.ii	In Section 3.3B of Conversion Documentation. Due to Unit design differences, proposed ITS 3.3.6 is only applicable to Unit 2.
3.3.7 Control Room Emergency Filtration System (CREFS) Instrumentation	3.3.7 Control Room Emergency Ventilation System (CREVS) Instrumentation	3.3.3.1 Radiation Monitoring Instrumentation Area Monitor 1.c	In Section 3.3B of Conversion Documentation
3.3.8 Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation	N/A	N/A	In Section 3.3B of Conversion Documentation. ISTS 3.3.8, FBACS, is not used in the BVPS specific implementation of the ISTS. BVPS does not have CTS requirements, or a system design that corresponds to FBACS, or safety analyses assumptions that would require this type of instrumentation to be operable.

SECTION 3.3 INSTRUMENTATION

ISTS	BVPS ITS	CTS	NOTES
3.3.9 Boron Dilution Protection System (BDPS) Instrumentation	3.3.8 Boron Dilution Detection Instrumentation	3.3.1.1 Reactor Trip System Instrumentation Function 6.b (Source Range Instrumentation Indication only Requirements)	In Section 3.3B of Conversion Documentation. ISTS 3.3.9 applies to a plant design that has an active system using source range instrument channels to initiate automatic action that re-positions valves in order to mitigate a boron dilution event. The BVPS design does not include this type of automatic mitigation system. The proposed BVPS version of this ISTS contains the source range indication requirements moved from the Reactor Trip System Instrumentation TS. The affected BVPS source range indication requirements provide monitoring capability only. Consistent with the ISTS, the source range indication only requirements were removed from the Reactor Trip System Technical Specification. The proposed ITS 3.3.8 was developed to house the BVPS specific source range indication requirements.

SECTION 3.4 REACTOR COOLANT SYSTEM

ISTS	BVPS ITS	CTS	NOTES
3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	3.2.5 DNB Parameters	
3.4.2 RCS Minimum Temperature for Criticality	3.4.2 RCS Minimum Temperature for Criticality	3.1.1.5 Minimum Temperature for Criticality	
3.4.3 RCS Pressure and Temperature (P/T) Limits	3.4.3 RCS Pressure and Temperature (P/T) Limits	3.4.9.1 Pressure/Temperature Limits	
3.4.4 RCS Loops - Modes 1 and 2	3.4.4 RCS Loops - Modes 1 and 2	3.4.1.1 RCS Loops - Normal Operation	

SECTION 3.4 REACTOR COOLANT SYSTEM

ISTS	BVPS ITS	CTS	NOTES
3.4.5 RCS Loops - Mode 3	3.4.5 RCS Loops - Mode 3	3.4.1.2 RCS Loops - Hot Standby	
3.4.6 RCS Loops - Mode 4 3.4.7 RCS Loops Mode 5, Loops Filled 3.4.8 RCS Loops Mode 5, Loops Not Filled	3.4.6 RCS Loops - Mode 4 3.4.7 RCS Loops Mode 5, Loops Filled 3.4.8 RCS Loops Mode 5, Loops Not Filled	3.4.1.3 RCS Loops - Shutdown	
3.4.9 Pressurizer	3.4.9 Pressurizer	3.4.4 Pressurizer	
3.4.10 Pressurizer Safety Valves	3.4.10 Pressurizer Safety Valves	3.4.3 Safety Valves	
3.4.11 Pressurizer Power Operated Relief Valves (PORVs)	3.4.11 Pressurizer Power Operated Relief Valves (PORVs)	3.4.11 Relief Valves	
3.4.12 Low Temperature Overpressure Protection (LTOP) System	3.4.12 Overpressure Protection System (OPPS)	3.4.9.3 Overpressure Protection Systems 3.5.4.1 Boron Injection Tank < 350 °F (Unit 1 only)	
3.4.13 RCS Operational Leakage	3.4.13 RCS Operational Leakage	3.4.6.2 Operational Leakage	
3.4.14 RCS Pressure Isolation Valve (PIV) Leakage	3.4.14 RCS Pressure Isolation Valve (PIV) Leakage	3.4.6.3 Pressure Isolation Valves	
3.4.15 RCS Leakage Detection Instrumentation	3.4.15 RCS Leakage Detection Instrumentation	3.4.6.1 Leakage Detection Instrumentation	
3.4.16 RCS Specific Activity	3.4.16 RCS Specific Activity	3.4.8 Specific Activity	
3.4.17 RCS Loop Isolation Valves	3.4.17 RCS Loop Isolation Valves	3.4.1.4.1 Loop Isolation Valves - Operating	

SECTION 3.4 REACTOR COOLANT SYSTEM

ISTS	BVPS ITS	CTS	NOTES
3.4.18 RCS Isolated Loop Startup	3.4.18 RCS Isolated Loop Startup	3.4.1.5 Isolated Loop Startup	
3.4.19 RCS Loops - Test Exceptions	3.4.19 RCS Loops - Test Exceptions	3.10.5 No Flow Test (Unit 1) 3.10.4 RCS Loops (Unit 2)	
3.4.20 Steam Generator Tube Integrity	3.4.20 Steam Generator Tube Integrity	3.4.5 Steam Generator Tube Integrity	CTS 3.4.5 is based on a new Technical Specification from LAR #s 324 (Unit 1) and 196 (Unit 2).

SECTION 3.5 ECCS

ISTS	BVPS ITS	CTS	NOTES
3.5.1 Accumulators	3.5.1 Accumulators	3.5.1 Accumulators	
3.5.2 ECCS - Operating	3.5.2 ECCS - Operating	3.5.2 ECCS Subsystems - $T_{avg} \geq 350°F$	
3.5.3 ECCS - Shutdown	3.5.3 ECCS - Shutdown	3.5.3 ECCS Subsystems - $T_{avg} < 350°F$	
3.5.4 Refueling Water Storage Tank (RWST)	3.5.4 Refueling Water Storage Tank (RWST)	3.1.2.8 Refueling Water Storage Tank (RWST)	
3.5.5 Seal Injection Flow	3.5.5 Seal Injection Flow	3.5.5 Seal Injection Flow (Unit 1) 3.5.4 Seal Injection Flow (Unit 2)	
3.5.6 Boron Injection Tank	N/A	3.5.4.1.1 Boron Injection System - Boron Injection Tank ≥ 350°F (Unit 1 only)	Never a part of the Unit 2 TS and eliminated from Unit 1 TS in the pending Extended Power Uprate License Amendment Request # 302. The BVPS ISTS conversion is based on the post uprate TS so this Unit 1

SECTION 3.5 ECCS

ISTS	BVPS ITS	CTS	NOTES
			TS is not shown in the Section 3.5 conversion documentation.

SECTION 3.6 CONTAINMENT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.6.1 Containment (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	3.6.1 Containment	3.6.1.1 Containment Integrity 3.6.1.2 Containment Leakage 3.6.1.6 Containment Structural Integrity	
3.6.2 Containment Air Locks (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	3.6.2 Containment Air Locks	3.6.1.3 Containment Air Locks	
3.6.3 Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	3.6.3 Containment Isolation Valves	3.6.3.1 Containment Isolation Valves	
3.6.4A Containment Pressure (Atmospheric, Dual, and Ice Condenser)	3.6.4 Containment Pressure	3.6.1.4 Internal Pressure	
3.6.4B Containment Pressure (Subatmospheric)	N/A	N/A	Although this is a subatmospheric type LCO, it is not selected for BVPS due to the changes resulting from approved License Amendment Request (LAR) numbers 317 (Unit 1) and 190 (Unit 2), License Amendments 271 (Unit 1) and 153 (Unit 2) incorporate changes that revise pressure and temperature requirements to be more consistent with an atmospheric containment

SECTION 3.6 CONTAINMENT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
			design than a subatmospheric design. Therefore, the atmospheric type LCO is selected for BVPS.
3.6.5A Containment Air Temperature (Atmospheric and Dual)	3.6.5 Containment Air Temperature	3.6.1.5 Air Temperature	
3.6.5B Containment Air Temperature (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.5C Containment Air Temperature (Subatmospheric)	N/A	N/A	Although this is a subatmospheric type LCO, it is not selected for BVPS due to the changes resulting from approved License Amendment Request (LAR) numbers 317 (Unit 1) and 190 (Unit 2), License Amendments 271 (Unit 1) and 153 (Unit 2) incorporate changes that revise pressure and temperature requirements to be more consistent with an atmospheric containment design than a subatmospheric design. Therefore, the atmospheric type LCO is selected for BVPS.
3.6.6A Containment Spray and Cooling Systems (Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.6B Containment Spray and Cooling Systems (Atmospheric and Dual) (Credit not taken for iodine removal by the Containment Spray System)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.6C Containment Spray System (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.6D Quench Spray (QS) System (Subatmospheric)	3.6.6 Quench Spray System	3.6.2.1 Containment Quench Spray System	

SECTION 3.6 CONTAINMENT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.6.6E Recirculation Spray (RS) System (Subatmospheric)	3.6.7 Recirculation Spray System	3.6.2.2 Containment Recirculation Spray System	
3.6.7 Spray Additive System (Atmospheric, Subatmospheric, Ice Condenser, and Dual)	3.6.8 Spray Additive System	3.6.2.3 Chemical Addition System	
3.6.8 Hydrogen Recombiners (Atmospheric, Subatmospheric, Ice Condenser, and Dual) (if permanently installed)	N/A	N/A	Deleted in Revision 3 (by TSTF-447). Removed from the BVPS CTS by a prior approved license amendment.
3.6.9 Hydrogen Mixing System (HMS) (Atmospheric, Ice Condenser, and Dual)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.10 Hydrogen Ignition System (HIS) (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.11 Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.12 Vacuum Relief Valves (Atmospheric and Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.13 Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.14 Air Return System (ARS) (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.15 Ice Bed (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.16 Ice Condenser Doors (Ice	N/A	N/A	Not applicable to the BVPS containment design.

SECTION 3.6 CONTAINMENT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
Condenser)			
3.6.17 Divider Barrier Integrity (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.18 Containment Recirculation Drains (Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design.
3.6.19 Shield Building (Dual and Ice Condenser)	N/A	N/A	Not applicable to the BVPS containment design. Moved to 3.6.8 in NUREG-1431 Revision 3 to replace the Hydrogen Recombiner LCO.

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.7.1 Main Steam Safety Valves (MSSVs)	3.7.1 Main Steam Safety Valves (MSSVs)	3.7.1.1 Main Steam Safety Valves (MSSVs)	
3.7.2 Main Steam Isolation Valves (MSIVs)	3.7.2 Main Steam Isolation Valves (MSIVs)	3.7.1.5 Main Steam Line Isolation Valves	
3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and [Associated Bypass Valves]	3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and MFRV Bypass Valves	N/A	New TS added to CTS.
3.7.4 Atmospheric Dump Valves (ADVs)	3.7.4 Atmospheric Dump Valves (ADVs)	N/A	New TS added to CTS.
3.7.5 Auxiliary Feedwater (AFW) System	3.7.5 Auxiliary Feedwater (AFW) System	3.7.1.2 Auxiliary Feedwater System	
3.7.6 Condensate Storage Tank (CST)	3.7.6 Primary Plant Demineralized Water Storage Tank (PPDWST)	3.7.1.3 Primary Plant Demineralized Water (PPDW)	

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.7.7 Component Cooling Water (CCW) System	3.7.7 Component Cooling Water (CCW) System	3.7.3.1 Component Cooling Water System (Unit 1) ; 3.7.3.1 Primary Component Cooling Water System (Unit 2)	
3.7.8 Service Water System (SWS)	3.7.8 Service Water System (SWS)	3.7.4.1 Reactor Plant River Water System (RPRWS) (Unit 1) ; 3.7.4.1 Service Water System (SWS) (Unit 2)	
3.7.9 Ultimate Heat Sink (UHS)	3.7.9 Ultimate Heat Sink (UHS)	3.7.5.1 Ultimate Heat Sink – Ohio River	
3.7.10 Control Room Emergency Filtration System (CREFS)	3.7.10 Control Room Emergency Ventilation System (CREVS)	3.7.7 Control Room Emergency Ventilation System (CREVS)	
3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)	3.7.11 Control Room Emergency Air Cooling System (CREACS)	3.7.6 Control Room Emergency Air Cooling System (CREACS)	
3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)	3.7.12 Supplemental Leak Collection and Release System (SLCRS)	3.7.8.1 Supplemental Leak Collection And Release System (SLCRS) 3.9.12 Fuel Building Ventilation System	Mode 1-4 requirements of CTS 3.7.8.1 are relocated. The fuel movement requirements of CTS 3.9.12 are retained in ITS 3.7.12.
3.7.13 Fuel Building Air Cleanup System (FBACS)	N/A	N/A	Not applicable to BVPS design.
3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)	N/A	N/A	Not applicable to BVPS design.

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.7.15 Fuel Storage Pool Water Level	3.7.15 Fuel Storage Pool Water Level	3.9.11 Storage Pool Water Level	
3.7.16 Fuel Storage Pool Boron Concentration	3.7.16 Fuel Storage Pool Boron Concentration	3.9.15 Fuel Storage Pool Boron Concentration (Unit 2) 3.9.14 Spent Fuel Storage Pool (Unit 1)	Boron concentration requirements from Unit 1 CTS 3.9.14 moved into ITS 3.7.16 and fuel storage requirements retained in ITS 3.7.14.
3.7.17 Spent Fuel Pool Storage	3.7.14 Spent Fuel Pool Storage	3.9.14 Spent Fuel Storage Pool (Unit 1) 3.9.14 Spent Fuel Pool Storage (Unit 2)	Boron concentration requirements from Unit 1 CTS 3.9.14 moved into ITS 3.7.16 and fuel storage requirements retained in ITS 3.7.14.
3.7.18 Secondary Specific Activity	3.7.13 Secondary Specific Activity	3.7.1.4 Activity	

SECTION 3.8 ELECTRICAL POWER SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
3.8.1 AC Sources Operating	3.8.1 AC Sources Operating	3.8.1.1 AC Sources Operating	
3.8.2 AC Sources Shutdown	3.8.2 AC Sources Shutdown	3.8.1.2 AC Sources Shutdown	
3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air	3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air	3.8.1.1 AC Sources Operating	
3.8.4 DC Sources Operating	3.8.4 DC Sources Operating	3.8.2.3 DC Distribution Operating	
3.8.5 DC Sources Shutdown	3.8.5 DC Sources Shutdown	3.8.2.4 DC Distribution Shutdown	
3.8.6 Battery Cell Parameters	3.8.6 Battery Cell Parameters	3.8.2.3 DC Distribution	

SECTION 3.8 ELECTRICAL POWER SYSTEMS

ISTS	BVPS ITS	CTS	NOTES
		Operating	
3.8.7 Inverters Operating	3.8.7 Inverters Operating	3.8.2.1 AC Distribution Operating	
3.8.8 Inverters Shutdown	3.8.8 Inverters Shutdown	3.8.2.2 AC Distribution Shutdown	
3.8.9 Distribution Systems Operating	3.8.9 Distribution Systems Operating	3.8.2.1 AC Distribution Operating 3.8.2.3 DC Distribution Operating	
3.8.10 Distribution Systems Shutdown	3.8.10 Distribution Systems Shutdown	3.8.2.2 AC Distribution Shutdown 3.8.2.4 DC Distribution Shutdown	

SECTION 3.9 REFUELING OPERATIONS

ISTS	BVPS ITS	CTS	NOTES
3.9.1 Boron Concentration	3.9.1 Boron Concentration	3.9.1 Boron Concentration	
3.9.2 Unborated Water Source Isolation Valves	3.1.8 Unborated Water Source Isolation Valves	3.1.2.9 Isolation of Unborated Water Sources - Shutdown	ISTS 3.9.2 "Unborated Water Source Isolation Valves" is applicable solely in Mode 6. The corresponding BVPS CTS is applicable in Modes 4, 5, and 6 and is located in Section 3.1 "Reactivity Control Systems". Consistent with the CTS, the BVPS ITS version of this TS will continue to be located in Section 3.1.
3.9.3 Nuclear Instrumentation	3.9.2 Nuclear Instrumentation	3.9.2 Instrumentation	
3.9.4 Containment Penetrations	3.9.3 Containment Penetrations	3.9.4 Containment Building Penetrations	

SECTION 3.9 REFUELING OPERATIONS

ISTS	BVPS ITS	CTS	NOTES
3.9.5 RHR and Coolant Circulation – High Water Level	3.9.4 RHR and Coolant Circulation – High Water Level	3.9.8.1 RHR and Coolant Circulation	
3.9.6 RHR and Coolant Circulation – Low Water Level	3.9.5 RHR and Coolant Circulation – Low Water Level	3.9.8.2 RHR and Coolant Circulation – Low Water Level	
3.9.7 Refueling Cavity Water Level	3.9.6 Refueling Cavity Water Level	3.9.10 Water Level	

SECTION 4.0 DESIGN FEATURES

ISTS	BVPS ITS	CTS	NOTES
4.1 Site Location	4.1 Site Location	5.1 Site Location	
4.2 Reactor Core	4.2 Reactor Core	5.2 Reactor Core	
4.3 Fuel Storage	4.3 Fuel Storage	5.3 Fuel Storage	

SECTION 5.0 ADMINISTRATIVE CONTROLS

ISTS	BVPS ITS	CTS	NOTES
5.1 Responsibility	5.1 Responsibility	6.1 Responsibility	
5.2 Organization	5.2 Organization	6.2 Organization	
5.3 Unit Staff Qualification	5.3 Unit Staff Qualification	6.3 Unit Staff Qualification	
5.4 Procedures	5.4 Procedures	6.8 Procedures	
5.5 Programs and Manuals	5.5 Programs and Manuals	6.8 Procedures	
5.6 Reporting Requirements	5.6 Reporting Requirements	6.9 Reporting Requirements	
5.7 High Radiation Area	5.7 High Radiation Area	6.12 High Radiation Area	