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March 19, 2001

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U. S. Nuclear Regulatory Commission
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Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Arkansas Nuclear One - Unit 1 - Reply To Request For Additional Information
(RAI) RE: Improved Technical Specification Section 3.4, "Reactor Coolant
Systems," 3.5, "Emergency Core Cooling Systems," 3.9, "Refueling Operations,"
4.0, "Design Features," and 5.0, "Administrative Controls" (TAC No. MA8082)

Gentlemen:

By letter dated January 28, 2000 (1CAN010007), Entergy Operations submitted a license amendment request to convert the Arkansas Nuclear One - Unit 1 (ANO-1) current Technical Specifications (CTS) to an improved Technical Specification (ITS) format similar to NUREG-1430, "Standard Technical Specifications - Babcock & Wilcox Plants," Revision 1, dated April 1995. During meetings on December 18, 2000, December 19, 2000, January 23, 2001, and January 24, 2001, members of the ANO staff and the NRC Technical Specifications Branch discussed the NRC comments on ITS Sections 3.4, "Reactor Coolant Systems," 3.5, "Emergency Core Cooling Systems," 3.9, "Refueling Operations," and the ANO resolutions of these comments. In addition, during a telephone call between members of the ANO staff and the NRC Technical Specifications Branch, the NRC provided comments on Section 4.0, "Design Features," and ANO provided some enhancements to Section 5.0, "Administrative Controls."

This submittal contains the Entergy Operations responses to the RAIs discussed at the meetings and telephone calls referenced above. The contents are arranged as follows:

Attachment 1 contains a description of the contents and format of the supplement package,

Attachments 2 and 3 delineate those comments received from the NRC Staff and ANO personnel, respectively, and the associated resolutions of those comments for Section 3.4,

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Attachments 4 and 5 delineate those comments received from the NRC Staff and ANO personnel, respectively, and the associated resolutions of those comments for Section 3.5,

Attachments 6 and 7 delineate those comments received from the NRC Staff and ANO personnel, respectively, and the associated resolutions of those comments for Section 3.9,

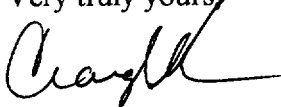
Attachments 8 and 9 delineate those comments received from the NRC Staff and ANO personnel, respectively, and the associated resolutions of those comments for Section 4.0, and

Attachment 10 delineates those comments received from the ANO staff and the associated resolutions of those comments for Section 5.0.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 19, 2001.

Very truly yours,

A handwritten signature in black ink, appearing to be "CGA/cws", written over a horizontal line.

CGA/cws
Attachments

cc: Mr. Ellis W. Merschoff w/o attachments
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Format of Supplement Package

The improved Technical Specification (ITS) supplement package is organized as described below:

TAB ITS

Contains the proposed ITS Limiting Conditions for Operation (LCOs).

TAB ITS Bases

Contains the proposed ITS Bases

TAB Current Technical Specification (CTS) Markup

Contains annotated copies of the CTS pages which show the disposition of existing requirements into the proposed ITS. The pages are arranged in ITS order. The upper right hand corner of the CTS page is annotated with the ITS Specification number to which the CTS page applies. Items on the CTS page that are addressed in other proposed ITS Sections (or Specifications within the Section) are annotated with the appropriate location.

Where a proposed ITS requirement differs from a CTS requirement, individual details of the CTS revision are annotated with alpha-numeric designators which relate to the appropriate Discussion of Change (DOC). The DOC provides a concise justification for the change. The DOCs are located directly preceding the CTS Markup in each Section or sub-Section. The alpha-numeric designators also relate to the evaluations supporting a finding of No Significant Hazard Consideration (NSHC).

The CTS pages in the Section packages reflect License Amendments issued as of the date of the submittal letter, and License Amendment Requests described in Attachment 2 to the submittal letter.

The DOCs are numbered sequentially within each letter category for each ITS Section or sub-Section. The proposed changes for each CTS requirement are separated into the following categories:

<u>Designator</u>	<u>Category</u>
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A	ADMINISTRATIVE - changes to the CTS that result in no additional or reduced restrictions or flexibility. These changes are supported in aggregate by a single NSHC.
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- M TECHNICAL CHANGES - MORE RESTRICTIVE - changes to the CTS that result in added restrictions or reduced flexibility. These changes are supported in aggregate by a single NSHC.
- L TECHNICAL CHANGES - LESS RESTRICTIVE - changes to the CTS that result in reduced restrictions or added flexibility. Each corresponding evaluation is supported by a corresponding evaluation supporting a finding of NSHC.
- LA TECHNICAL CHANGES - REMOVAL OF DETAIL - changes to the CTS that eliminate detail and relocate the detail to a licensee controlled document. Typically, this involves details of system design and function, or procedural detail on methods of conducting a surveillance. These changes are supported in aggregate by a single NSHC.
- R RELOCATED SPECIFICATIONS - changes to the CTS that encompass the requirements that do not meet the selection criteria of 10 CFR 50.36(c)(2)(ii). These changes are supported in aggregate by a single NSHC.

The CTS Bases pages are replaced in their entirety. A single DOC justifies the replacement.

TAB NSHC

Contains evaluations required by 10 CFR 50.91(a) supporting a finding of No Significant Hazard Consideration (NSHC). Generic evaluations for a finding of NSHC have been written for each category of changes except Category "L." The evaluations supporting a finding of NSHC are ordered as follows: A, M, LA, R, and L. Each evaluation is annotated to correspond to the DOC discussed in the NSHC. The generic NSHC evaluations for Category A, M, and R changes are located in the Split Report section.

TAB NUREG Markup

Contains annotated copies of the applicable NUREG-1430, Revision 1, LCOs which show how the proposed ITS LCO differs from the NUREG LCO. Where a proposed ITS LCO differs from the NUREG LCO, individual details of the change are annotated with numeric designators which relate to the appropriate Discussion of Difference (DOD). The DOD provides a concise justification for the change. The LCO DODs are located directly preceding the associated markup for each Section or sub-Section.

TAB Bases Markup

Contains annotated copies of the applicable NUREG-1430, Revision 1, Bases which show how the proposed ITS Bases differ from the NUREG Bases. Where a proposed ITS Bases requirement differs from the NUREG Bases, individual details of the change are annotated with numeric designators which relate to the appropriate DOD. The DOD provides a justification for the change. The DODs are located directly preceding the associated markup of the NUREG Limiting Conditions for Operation for each Section or sub-Section.

Existing ANO-1 License Amendment Requests (LARs) Incorporated in this supplement

Two new LARs have been incorporated in this supplement. These LARs are:

- 1) LAR dated August 29, 2000, related to revision of the SG tube ODIGA requirements, and
- 2) LAR dated September 28, 2000, related to revision of the SG tube reroll process.

The following LARs were referenced in our letter dated January 28, 2000, and have been approved as Amendments to the current TS. This submittal updates the reference to these LARs:

- 1) LAR dated November 23, 1999, related to revision of the laboratory testing requirements for activated charcoal filters, affecting Section 5.0 CTS markups was approved as Amendment 210, and
- 2) LAR dated July 14, 1999, related to revision of Post Accident Sampling System (Pass) requirements, affecting Section 5.0 CTS markups was approved as Amendment 208.

Disposition of Generic Changes

In addition to those generic changes shown as incorporated in our letter dated January 28, 2000, several additional generic changes have been incorporated in this supplement.

Section	TSTF Number	Title	Discussion
3.9	TSTF-284, Rev. 3	Add "Met vs. Perform" to Specification 1.4, Frequency	3.9DOD-04
3.4, 3.9	TSTF-286, Rev. 2	Define "Operations Involving Positive Reactivity Additions"	3.4ADOD-30, 3.9DOD-31
3.9	TSTF-272, Rev. 1	Refueling Boron Concentration Clarification	3.9DOD-27
5.0	TSTF-308, Rev. 1	Determination of Cumulative and Projected Dose Contributions in RECP	5.0DOD-41

Section	TSTF Number	Title	Discussion
3.5	TSTF-325, Rev. 0	ECCS Conditions and Required Actions with <100% Equivalent ECCS Flow	3.5DOD-25
3.9	TSTF-349, Rev. 1	Add Note to LCO 3.9.5 Allowing Shutdown Cooling Loops Removal from Operation	3.9DOD-29
3.4	TSTF-352, Rev. 1	Provide Consistent Completion Time to Reach MODE 4	3.4BDOD-36
3.9	TSTF-361, Rev. 2	Allow Standby SDC/RHR/DHR loop to be inoperable to support testing	3.9DOD-30
5.0	TSTF-364, Rev. 0	Revision to TS Bases Control Program to Incorporate Changes to 10 CFR 50.59	5.0DOD-43
3.4, 3.9	TSTF-367, Rev. 0	Insert Reference to Criterion 4	3.4ADOD-28 3.9DOD-24

List of Beyond Scope Items

No additional Beyond Scope Items, beyond those addressed in our January 28, 2000, submittal are contained in this supplement.

Resolution of NRC Comments and ANO-1 Initiated Changes

Attachment 2 provides a listing of all comments on ITS Section 3.4 received as a result of NRC review and the ANO resolutions of these comments. Attachment 3 provides a list of changes to ITS Section 3.4 as a result of the incorporation of comments received from the ANO staff. Attachment 4 provides a listing of all comments on ITS Section 3.5 received as a result of NRC review and the ANO resolutions of these comments. Attachment 5 provides a list of changes to ITS Section 3.5 as a result of the incorporation of comments received from the ANO staff. Attachment 6 provides a listing of all comments on ITS Section 3.9 received as a result of NRC review and the ANO resolutions of these comments. Attachment 7 provides a list of changes to ITS Section 3.9 as a result of the incorporation of comments received from the ANO staff. Attachment 8 provides a listing of all comments on ITS Section 4.0 received as a result of NRC review and the ANO resolutions of these comments. Attachment 9 provides a list of changes to ITS Section 4.0 as a result of the incorporation of comments received from the ANO staff. Attachment 10 provides a list of changes to ITS Section 5.0 as a result of the incorporation of comments received from the ANO staff.

In each ITS Section, each comment is assigned a unique identifying number such as 3.6.1-1, for an NRC generated comment, or ANO-71, for an ANO generated comment. This identifying number also appears in the left hand margin on each page of the submittal package that was revised as a result of the comment, with two exceptions. The proposed ITS pages and the proposed ITS Bases pages are not marked to show the comment number. Each comment response details the location of the necessary changes.

**Arkansas Nuclear One - Unit 1
Improved TS Review NRC Comment Resolutions
ITS Section 3.4: Reactor Coolant System**

Comment 3.4A-01

ITS LCO 3.4.1

STS LCO 3.4.1 a. and b.

DOD 1, M10

STS LCO 3.4.1 contains DNB limits for RCS loop pressure, hot leg temperature and RCS total flow. ITS LCO indicates that the specific limits will be placed in the COLR. DOD 1 stated that the DNB limits "are currently controlled administratively, and since they are subject to change with fuel design changes, are proposed to be controlled in the COLR."

Generic Letter 88-16 provided guidance on removing cycle-specific parameter limits from the Technical Specifications. RCS loop pressure, hot leg temperature and RCS total flow do not change with each core reload. Additionally, fuel design changes generally do not occur at each reload. The purpose of the COLR is to administratively control limits that change with each fuel cycle.

Comment: Provide justification for including the DNB limits for RCS loop pressure, hot leg temperature and RCS total flow into the COLR.

Response Relocating these values to the Core Operating Limits Report has previously been approved by the NRC for the Oconee Nuclear Station in their ITS conversion.

The NRC approved the relocation of the Variable Low RCS Pressure-Temperature (VLPT) protective limits figure in Amendment 186, dated October 3, 1996. The thermal power limits and RCS flow rates for all allowable RCP operating conditions were included on this figure. In the Safety Evaluation, the staff stated that "Although there have only been a few previous revisions to the ANO-1 VLPT setpoint, it is anticipated that an increasing number of future changes will be made in order to accommodate advanced core designs ... Therefore, due to these expected frequent changes to the VLPT setpoint for future cycles of ANO-1, the staff considers the VLPT setpoint an appropriate cycle-specific item." Although the staff was aware that these parameters would not change every cycle, they are considered to be cycle-specific. This same conclusion can be reached for the RCS loop pressure and hot leg temperature parameters. The RCS pressure, temperature, and flow LCO values may not necessarily change each fuel cycle, but they do have the potential for change. Factors which have the potential to change these parameters include:

- (1) Instrument Uncertainty. The methodology for developing the surveillance criteria includes explicit adjustments for instrument uncertainty. EIC periodically reviews and revises the uncertainty evaluations for important plant instrumentation. Undesirable levels of uncertainty may lead to instrument upgrade/replacement, forcing new uncertainty analyses and values (RCS hot leg temperature and pressure);

- (2) DNB Flow Rate Assumptions. The value assumed for RCS flow in the DNB analysis may be modified to account for various factors. These include steam generator tube plugging, introduction of new fuel assembly designs, introduction on new assembly features (e.g., grid strap design, end fitting design, etc.) (RCS hot leg temperature); and
- (3) Core Bypass Flow Assumptions. The fraction of RCS flow expected to bypass the core has the potential to vary from cycle-to-cycle due to changes in the number of burnable poison rod assemblies, control rod guide tube design changes, instrument tube design changes, etc (RCS hot leg temperature).

3.4ADOD-01 has been revised to include a reference to Amendment 186 and to the Oconee ITS.

Comment 3.4A-02

ITS LCO 3.4.1
STS LCO 3.4.1 a. and b.
DOD 1

DOD 1 states that ITS LCO 3.4.1 and 3.4.4 are revised to allow two pump operation (one pump in each loop) consistent with CTS 3.1.1.1.A. CTS 3.1.1.1.A states "operation with one Reactor

Coolant Pump operating in each loop is limited to 24 hours with the reactor critical." ITS LCO 3.4.1 does not discuss the number of pumps in operation. Comment: Provide clarification as to how ITS LCO 3.4.1 was revised to allow two pump operation consistent with CTS 3.1.1.1.A.

Response Revised 3.4ADOD-01 to clarify that the allowance to operate with two RCPs, one in each loop, for 24 hours is contained in ITS LCO 3.4.4 only.

Comment 3.4A-03

ITS 3.4.1 LCO Note
ITS Bases 3.4.1 LCO
STS 3.4.1 Applicability Note
STS Bases 3.4.1 Applicability
DOD 2

ITS 3.4.1 moved the Note from the Applicability to LCO, which deviates from the STS. DOD 2 stated this change was necessary to avoid confusion in the application of ITS SR 3.0.4. This is unnecessary because applying the note during a power change, which meets the criteria, is not a MODE change. The note should remain part of ITS 3.4.1 Applicability. ITS SR 3.0.4 allows for exceptions to Applicability statements.

ANO1 rephrased ITS 3.4.1 Applicability Note from STS 3.4.1 Applicability. The changes are facility preferences but do not have a plant specific design Bases for inclusion.

The only change that is necessary due to a plant specific difference is replacing “ramps” with “change.”

Comment: Provide additional information why they require moving the Note from the Applicability to LCO. Provide a plant specific Bases for the changes to the Note.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-1 to retain Note in the Applicability.
 - 2) Revised proposed ITS page 3.4.1-1 to reflect the change in the NUREG-1430 markup.
 - 3) Revised NUREG-1430 Bases markup page 3.4-3 to retain discussion of Note in the Applicability.
 - 4) Revised proposed ITS Bases page B 3.4.1-3 to reflect the change in the NUREG-1430 Bases markup.
 - 5) Revised 3.4ADOD-02 to delete the discussion of the Note relocation, and to provide a discussion of pressure Response to a power change.
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Comment 3.4A-04

ITS SR 3.4.1.1 Note 2
ITS Bases SR 3.4.1.1 Note 2
STS SR 3.4.1.1
DOD 9

ITS SR 3.4.1.1 added a Note that allows not meeting the SR during pressure transients due to a THERMAL POWER change > 5% RTP per minute. This note already exists in the Applicability. ITS SR 3.0.1 does not require satisfying ITS SR 3.4.1.1 during an exception to the Applicability. This Note is redundant to the Applicability Note.

Comment: Provide additional information for why the additional note is required or delete the note.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-2 to delete the proposed SR Note.
 - 2) Revised proposed SR 3.4.1.1 to delete the proposed SR Note.
 - 3) Revised NUREG-1430 Bases markup page B 3.4-5 to delete the proposed SR Note.
 - 4) Revised proposed ITS page 3.4.1-4 to delete the proposed SR Note.
 - 5) Revised 3.4ADOD-02 to delete discussion of the proposed SR Note.
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Comment 3.4A-05

ITS SR 3.4.1.4
STS SR 3.4.1.4
DOD 3

ITS SR 3.4.1.4 Note was modified to allow 7 days after stable thermal conditions are established at $\geq 90\%$ RTP to complete the SR. DOD 3 did not provide an adequate technical bases why 7 days is required to establish the required conditions and perform the surveillance. DOD 3 also did not provide an adequate technical bases why operation for 7 days would be acceptable. Comment: Provide additional information why 7 days is required to complete the SR and additional information justifying continued operation for 7 days after reaching $\geq 90\%$ power.

- Response**
- 1) Revised 3.4ADOD-3 to delete discussion of 7 day allowance and included more discussion for the $\geq 90\%$ RTP statement in lieu of "in the higher power range."
 - 2) Revised NUREG-1430 markup page 3.4-2 to delete the 7 day allowance.
 - 3) Revised proposed ITS page 3.4.1-2 to reflect the change in markup.
 - 4) Revised NUREG-1430 Bases page B 3.4-6 to delete the 7 day allowance.
 - 5) Revised proposed ITS Bases page B 3.4.1-4 to reflect change in markup.
-

Comment 3.4A-06
ITS LCO 3.4.2
STS LCO 3.4.2
DOD 6

DOD 6 indicates that the methods for determining RCS Average Temperature differ between normal operation with all RCPs and 3 pump operation. ITS LCO 3.4.2, ITS SR 3.4.2.1 or ITS Bases 3.4.2 did not include information about the methodology differences. Comment: Provide information in ITS Bases 3.4.2 for the different methodologies of determining RCS Average Temperature for different RCP combinations.

- Response**
- 1) Revised NUREG-1430 Bases markup insert B 3.4-8A, associated with page B 3.4-8, to describe Tave calculation during normal RCS flow operation and during 3 pump operation in the Bases for SR 3.4.2.1.
 - 2) Revised proposed ITS page B 3.4.2-2 to incorporate the changes in the markup.
 - 3) Revised 3.4ADOD-06 to discuss incorporation of this additional detail in the Bases for SR 3.4.2.1.
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Comment 3.4A-07
ITS LCO 3.4.2 and LCO 3.4.3
STS LCO 3.4.2
CTS 3.1.3.1, 3.1.3.2, 3.1.3.7
DOC A16, L5

CTS 3.1.3.1 and 3.1.3.2 specify the Minimum Temperature for Criticality. ITS 3.4.2 contains the Minimum Temperature for Criticality limits. ITS 3.4.3 contains the limits for Minimum Temperature for Criticality during physics testing. All requirements for Minimum Temperature for Criticality should be contained in ITS 3.4.2.

CTS 3.1.3.7 restoring temperature within CTS 3.1.3.2 limits within 15 minutes or be in Hot Shutdown within the next 15 minutes. ITS 3.4.3 Condition A requires that if the LCO is not met then within 30 minutes the parameter must be restored to within limits. ITS 3.4.3 allows up to 6 hours to be in MODE 3 if the temperature could not be restored to within the Minimum Temperature for Criticality limit within 30 minutes. The ITS allows a longer period to be in MODE 3 than CTS allows to be in Hot Standby.

DOC L5 justifies the time change to be in MODE 3 to be consistent with STS and allow sufficient time to allow the activity to be accomplished in a controlled, orderly manner

without challenging plant systems. The change would only be consistent with STS if the minimum temperature for criticality curves are maintained in the PTLR. Adding the minimum temperature for criticality to ITS 3.4.3 was a change to STS 3.4.3 proposed by ANO1. DOC L5 provides insufficient information to justify extending the time required to be in MODE 3 from the CTS 3.1.3.7 required time of 30 minutes to ITS allowed time of 6 hours.

Comment: Incorporate Minimum Temperature for Criticality requirements during physics testing in ITS 3.4.2 or provide justification for a why a longer time to achieve MODE 3 is allowed during physics testing (ITS 3.4.3) than is allowed during operation in MODE 1 and 2 (ITS 3.4.2).

Response LCO 3.4.2 is excepted during PHYSICS Testing in MODE 2 by LCO 3.1.9. Therefore, placing the SR in LCO 3.4.2 would result in the SR being excepted. CTS actions have been incorporated as Condition A in LCO 3.4.3.

- 1) Revised NUREG-1430 markup page 3.4-4 and Insert page 3.4-4A to show the retention of the CTS 3.1.3.7 Actions as Condition A, and re-lettered the other Conditions accordingly.
- 2) Revised proposed ITS page 3.4.3-1 to reflect the change in markup.
- 3) Drafted 3.4ADOD-31 to discuss the retention of the CTS actions.
- 4) Revised NUREG-1430 Bases markup pages B 3.4-13, B 3.4-14, and B 3.4-15 and Insert B3.4-13A to support the changes in the LCO.
- 5) Revised proposed ITS Bases pages B 3.4.3-4, B 3.4.3-5, and B 3.4.3-6 to reflect the changes in the Bases markups.
- 6) Revised CTS markup pages 18, 21-1, and 21-2 to reflect the retention of the CTS 3.1.3.7 actions in ITS 3.4.3.

Comment 3.4A-08
ITS LCO 3.4.4
STS LCO 3.4.4.b
DOD 1

STS LCO 3.4.4 contains thermal power limit for three RCPs operating. ITS LCO indicates that the specific limit will be placed in the COLR. DOD 1 stated that the thermal power limits "are currently controlled administratively, and since they are subject to change with fuel design changes, are proposed to be controlled in the COLR."

Generic Letter 88-16 provided guidance on removing cycle-specific parameter limits from the Technical Specifications. Thermal power does not change with each core reload. Additionally, fuel design changes generally do not occur at each reload. The purpose of the COLR is to administratively control limits that change with each fuel cycle. Comment: Provide justification for including the thermal power limits in the COLR.

Response The NRC approved the relocation of the Variable Low RCS Pressure-Temperature (VLPT) protective limits figure in Amendment 186, dated October 3, 1996. In the Safety Evaluation, the staff stated that "Although there have only been a few previous revisions to the ANO-1 VLPT setpoint, it is anticipated that an increasing number of future changes will be made in order to accommodate advanced core designs ... Therefore, due to these expected frequent changes to the VLPT setpoint for future cycles of ANO-1, the staff considers the VLPT setpoint an appropriate cycle-specific item." The thermal power limits for all allowable RCP operating conditions were included on this figure. Factors which have the potential to change these parameters include instrument uncertainty. The methodology for developing the surveillance criteria includes explicit adjustments for instrument uncertainty. EIC periodically reviews and revises the uncertainty evaluations for important plant instrumentation. Undesirable levels of uncertainty may lead to instrument upgrade/replacement, forcing new uncertainty analyses and values.

3.4ADOD-01 has been revised to include a reference to Amendment 186.

Comment 3.4A-09
ITS LCO 3.4.5 Note
STS LCO 3.4.5 Note
CTS 3.1.1.6 Note *
DOD 8, DOD 23

STS LCO 3.4.5 Note states that all reactor coolant pumps may be de-energized for ≤ 8 hours per 24 hour period for the transition to or from the Decay Heat Removal System, and all RCPs may be de-energized for ≤ 1 hour per 8 hour period for any other reason. CTS 3.1.1.6 Note * states that all RCPs may be de-energized for up to 1 hour. ITS 3.4.5 Note removes all the time limitations. The ITS 3.4.5 Note is not consistent with STS 3.4.5 Note or CTS 3.1.1.6 Note *. DOD 8 states that this change is consistent with the current license basis and "that sufficient heat removal can normally be accomplished without a pump operating, via natural circulation." However, DOD 23 removes most of the references to natural circulation in the Bases 3.4.5.

Comment: Provide justification for removing all time limitations in ITS LCO 3.4.5 Note and show how this change is consistent with the current license basis.

Response

- 1) Revised 3.4ADOC-M15 to show as not used.
- 2) CTS markup page 16a-1 revised to delete 3.4ADOC-M15 from the markup..
- 3) Revised 3.4ADOC-L07 to discuss the less restrictive aspects of this change.
- 4) Revised 3.4ANSHC-L07 to evaluate this less restrictive change.
- 5) Revised NUREG-1430 markup page 3.4-7 to show incorporation of the 3.4.5 LCO Note with time restrictions on use and to delete 3.4ADOD-08 and 3.4ADOD-17.
- 6) Revised 3.4ADOD-08 and 3.4ADOD-17 to show as not used.
- 7) Revised proposed ITS page 3.4.5-1 to reflect the change in markup.
- 8) Revised NUREG-1430 Bases markup page B 3.4-22 to reflect the retention of the time restrictions and the 10F subcooling in the 3.4.5 LCO Note.
- 9) Revised proposed ITS page 3.4.5-2 to reflect the changes in the markup.

Comment 3.4A-10

ITS LCO 3.4.5 Note b
ITS Bases LCO 3.4.5
STS LCO 3.4.5 Note b
CTS 3.1.1.6 Note *
DOD 17

STS LCO 3.4.5 Note b requires core outlet temperature be maintained at least [10] °F below saturation temperature. ITS LCO 3.4.5 Note b requires core outlet temperature be maintained sufficiently below saturation temperature. ITS Bases LCO 3.4.5 does not define “sufficiently” by providing values for what margin to saturation temperature will satisfy the specification. ITS LCO 3.4.5 Note b is not consistent with ITS LCO 3.4.6 Note b and ITS LCO 3.4.7 Note b. CTS 3.1.1.6 Note * uses a value of at least 10 °F below saturation. ITS should provide a value or set of values for required subcooling. Comment: Provide additional information concerning why a single value for subcooling cannot be used in the ITS or provide specific values for required subcooling.

Response Revised the submittal to retain the 10 °F subcooling requirement. See the Response to Comment 3.4A-09 for details.

Comment 3.4A-11

ITS 3.4.7 Action A
STS 3.4.7 Action A and B
DOD 14
TSTF-263, Rev. 3

TSTF-263, Rev. 3 created new STS 3.4.7 Actions A and B to substitute for STS Action A. ITS 3.4.7 Action A modifies Revision 1 of STS 3.4.7 and does not incorporate TSTF-263, Rev. 3. DOD 14 states that the change revises TSTF 263, Rev. 3 for clarity as requested by the ANO site personnel. DOD 14 also states the Conditions and Required Actions presented result in approximately the same requirements as TSTF-263, Rev. 3. DOD 14 did not justify the deviation from STS 3.4.7 Actions A and B as presented in TSTF-263, Rev. 3. All other portions of TSTF-263, Rev. 3 were adopted in the ITS. Comment: Provide additional information why STS 3.4.7 Action A and B from TSTF-263, Rev. 3 were not adopted.

Response

- 1) Revised NUREG-1430 markup page 3.4-12 to show the incorporation of TSTF-263, Rev 3 new Condition B (Insert 3.4-12A).
- 2) Revised NUREG-1430 markup page 3.4-15 to more closely incorporate TSTF-263, Rev 3 in Condition B.
- 3) Revised 3.4ADOD-14 to indicate that this DOD is not used, and 3.4ADOD-09 to simplify the discussion.
- 4) Revised proposed ITS pages 3.4.7-2 and 3.4.8-2 to reflect the changes in the markup.
- 5) Revised NUREG-1430 Bases markup pages B 3.4-33 and B 3.4-37 for consistency with TSTF-263, Rev 3.

- 6) Revised proposed ITS page B3.4.7-4 and B 3.4.8-3 to reflect the changes in the NUREG-1430 Bases markups.
 - 7) Revised CTS markup page 16a-2 to show the incorporation of LCO 3.4.7 Condition B as inserted by TSTF-263, Rev 3.
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Comment 3.4A-12

ITS LCO 3.4.7
STS LCO 3.4.7
CTS 3.1.1.6
DOC M4
DOD 18

CTS 3.1.1.6 requires at least two of four coolant loops (2 DHR and 2 RCS loops) to be operable. The RCS loops require that the reactor coolant loop, its associated steam generator and at least one associated reactor coolant pump be operable. For a steam generator to be considered operable it must have an adequate supply of feedwater, i.e., the motor driven EFW pump must be operable, or adequate secondary water level must exist. DOC M4 states that both steam generators must be operable, i.e. secondary water level above a specific level, if the motor driven EFW pump is inoperable. DOC M4 implies that if one steam generator is inoperable, i.e., secondary side level below a specific value, and the motor driven EFW pump is inoperable the remaining steam generator cannot be considered operable. With the motor driven EFW pump inoperable, both steam generators would have to be operable in order for either RCS loop to be considered operable.

ITS LCO 3.4.7 requires one additional DHR loop to be operable or the steam generators shall be OPERABLE. ITS LCO 3.4.7 Bases explains that a single SG is sufficient to provide the necessary heat sink if the motor driven EFW pump is available. Otherwise, ITS requires both SGs to provide the necessary heat sink.

CTS does not provide explicit requirements for EFW when SG secondary water level is below a specified value. However, operability as discussed by DOC M4 must be met to consider the SG operable for both CTS 3.1.1.6 compliance and ITS LCO 3.4.7 compliance. The requirements are the same for a SG operability in both the CTS and the ITS. Adding the explicit information about EFW pump requirements for SG operability to the ITS Bases 3.4.7 LCO does not create a more restrictive requirement.

Comment: Provide additional documentation why ITS 3.4.7 is more restrictive than CTS 3.1.1.6 concerning steam generator operability.

- Response**
- 1) Revised 3.4ADOC-M4 to delete the discussion based on motor-driven EFW pump availability.
 - 2) Revised CTS markup page 16a-2 to limit the application of 3.4ADOC-M4 .
 - 3) Revised NUREG-1430 markup pages 3.4-11 and 3.4-12 to incorporate a minimum SG level for SG operability and to require two SGs to be operable if one DHR loop is inoperable.
 - 4) Revised 3.4ADOD-18 to show it as not used.
 - 5) Revised proposed ITS pages 3.4.7-1 and 3.4.7-3 to reflect the changes in the markup.

- 6) Revised NUREG-1430 Bases markup pages B 3.4-30, B 3.4-31, B 3.4-32, B 3.4-33, and B 3.4-34 to reflect the retention of a minimum SG level.
- 7) Revised proposed ITS Bases pages B 3.4.7-1, B 3.4.7-2, B 3.4.7-3, B 3.4.7-4, and B 3.7.4-5 to reflect the changes in the markup.

Comment 3.4A-13

ITS 3.4.8
STS 3.4.8
CTS 3.1.1.6
DOC L2, DOD 15

CTS 3.1.1.6.1 and 2 allow Reactor Coolant Loops to be considered as decay heat removal loops. ITS 3.4.8 only uses DHR loops as decay heat removal loops and does not allow Reactor Coolant Loops as decay heat removal loops. ITS 3.4.8 not allowing Reactor Coolant Loops to satisfy the LCO is more restrictive than CTS 3.1.1.6.1 and 3.1.1.6.2.

Comment: Provide applicable change documentation.

Response Revised 3.4ADOC-L2 to discuss ANO's use of 3.1.1.6 with respect to reactor coolant pump operability when in MODE 5 with loops not full.

Comment 3.4A-14

CTS 3.1.2.4, 3.1.2.5, 3.4.3 Bases and References, Table 4.1-3 Items 1.f, 5.a and corresponding notes.

Justification for Specification Relocation for Table 4.1-3 (App. A, pg. 27)

Justification for Specification Relocation for 3.1.2.4 (App. A, pg. 1)

Justification for Specification Relocation for 3.1.2.5 (App. A, pg. 3)

CTS 3.1.2.4, 3.1.2.5, 3.4.3 Bases and References, Table 4.1-3 Items 1.f, 5.a and corresponding notes were identified as relocated specifications. ANO1 provided justifications for Specification Relocation and provided adequate justification for removal from the CTS. However, only removing complete LCOs are allowed to be relocations.

Comment: Provide correct classification for the change.

Response The ANO-1 CTS is a custom Tech Spec. Many SRs do not have LCOs and many LCOs do not have SRs. These relocations were "complete" relocations, in that all associated information was addressed in the relocation.

Comment 3.4A-15

DOD 10

DOD 10 indicates that the revision is consistent with TSTF 265, Rev. 3. Rev. 2 of TSTF 265 is the latest approved revision of the TSTF. Comment: Provide documentation that DOD 10 is consistent with TSTF 265, Rev. 2.

Response Revised 3.4ADOD-10 to refer to the correct revision of TSTF-265 that was incorporated (Rev. 2).

Comment 3.4A-16
ITS Bases SR 3.4.1.4
STS Bases SR 3.4.1.4
DOD 20

STS Bases SR 3.4.1.4 specifies that RCS flow measurement is by performance of a precision calorimetric heat balance. ITS Bases SR 3.4.1.4 deletes the method of flow measurement, i.e., precision calorimetric heat balance. Insert B3.4-6A states that a calorimetric heat balance will be performed. The RCS flow measurement method, that will be used by ANO1, was not specified in the ITS Bases. Comment: Provide additional information why the method of flow measurement is deleted early in the discussion for SR 3.4.1.4 but is added later in the discussion.

Response Revised 3.4ADOD-20 to discuss the deletion of precision calorimetric heat balance from the SR 3.4.1.4 Bases.

Comment 3.4A-17
ITS Bases 3.4.3 Background
STS Bases 3.4.3 Background
DOD 7

ITS Bases 3.4.3 Background adds the sentence "These specimens are installed near the inside wall of this or a similar reactor vessel in the core region." DOD 7 does not provide a justification for adding the allowance to use specimens from a similar reactor vessel. Comment: Provide additional information allowing P/T limit curve determination using specimens from similar reactor vessels.

Response Revised 3.4ADOD-07 to provide information on the Master Integrated Reactor Vessel Surveillance Program. No other changes are required since the proposed ITS 3.4.3 Bases Background discussion references the Master Integrated Reactor Vessel Surveillance Program and provides a reference to the appropriate B&W Topical Report (BAW-1543).

Comment 3.4A-18
ITS Bases 3.4.3 LCO, Bases 3.4.3 References
STS Bases 3.4.3 LCO, Bases 3.4.3 References
DOD 6

ITS Bases 3.4.3 LCO adds information contained in insert B3.4-12A. DOD 6 is indicated as justification for this additional information. ITS Bases 3.4.3 References replaces STS references 5 and 6 with new references 6 through 8. DOD 6 is indicated as justification for the change in references. DOD 6 discusses a change to STS section 3.4.2 instead of

section 3.4.3. Comment: Provide justification for the information contained in insert B3.4-12A and for the changed references.

- Response**
- 1) Revised 3.4ADOD-07 to include changes to references in the NUREG-1430 Bases references for LCO 3.4.3.
 - 2) Revised NUREG-1430 Bases markup page B 3.4-12 and B 3.4-16
-

Comment 3.4A-19
ITS Bases 3.4.3 Action C.1 and C.2
STS Bases 3.4.3 Action C.1 and C
DOD "Edit"

ITS Bases 3.4.3 Action C.1 and C.2 adds "once" to the requirement that an evaluation be performed before entry into MODE 4. A DOD was not provided to justify the necessity of specifying one evaluation must be performed. Comment: Provide additional information why once was added to the requirement that an evaluation be performed prior to entry into MODE 4.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.4-15 to delete the insertion of "once" in the Action C.1 and C.2 discussion.
 - 2) Revised proposed ITS Bases page B 3.4.3-6 to reflect the change in markup.
-

Comment 3.4A-20
ITS Bases 3.4.4 Safety Analyses
DOD 21

The last sentence of ITS Bases Insert B3.4-18A states "In addition to the coastdown events, the single pump locked rotor event has been analyzed and shows that either the minimum DNB ratio is not less than the applicable critical heat flux correlation limit or did the fuel cladding experience significant temperature excursions." The last part of this sentence does not appear to be worded correctly. Comment: Provide clarification for this sentence in Insert B3.4-18A.

- Response**
- 1) Revised NUREG-1430 Bases markup page Insert B3.4-18A to be consistent with wording of SAR Section 14.1.2.6.1.
 - 2) Revised proposed ITS Bases page B 3.4.4-2 to reflect changes in the markup.
-

Comment 3.4B-01

ITS LCO 3.4.9.a
STS LCO 3.4.9.a
CTS 3.1.3.4
DOD 21

STS LCO 3.4.9.a requires pressurizer level be \leq [290] inches. ITS LCO 3.4.9.a requires pressurizer level be within limits. DOD 21 indicates the limits are identified in SR 3.4.9.1. CTS 3.1.3.4 specifically lists the limits. The actual limits should be maintained in the LCO.

Comment: Include the specific required values for pressurizer level in the LCO statement.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-16 to incorporate pressurizer level limits.
 - 2) Revised propose ITS page 3.4.9-1 to reflect change in markup.
 - 3) Revised NUREG-1430 Bases markup page B 3.4-41 to show incorporation of pressurizer level limits.
 - 4) Revised proposed ITS Bases page B 3.4.9-3 to reflect the change in the Bases markup.
-

Comment 3.4B-02

ITS 3.4.10 Note 1
ITS Bases 3.4.10
STS 3.4.10
CTS 3.3.1.3
DOD 3, 35

ITS 3.4.10 Note 1 added the requirement that only one pressurizer safety valve is required to be operable in MODE 3 and MODE 4 with RCS temperature > 262 °F. It also added specific Required Action with the required pressurizer safety valve is inoperable in MODE 3 and MODE 4 with RCS temperature > 262 °F. When the LCO and Required Actions differ for different operating modes, STS creates separate LCOs for the different modes. For example, LCOs 3.4.4 through 3.4.8 and 3.5.2 through 3.5.3. A separate LCO should be created for MODE 3 and MODE 4 with RCS temperature > 262 °F. Comment: Provide a specific ITS LCO for MODE 3 and MODE 4 with RCS temperature > 262 °F. Submit a revised markup of STS LCO 3.4.10 for MODE 1 and MODE 2.

- Response** Revised 3.4BDOD-03 to provide examples of similar format for this proposed LCO.
-

Comment 3.4B-03

ITS SR 3.4.10.1 Note
STS SR 3.4.10
DOD 4

ITS SR 3.4.10.1 adds a Note that indicates that the lift settings are not required to be within limits until 36 hours following entry into MODE 3 provided a preliminary cold

setting was made prior to heatup. This information is already contained in LCO 3.4.10 Note. Comment: Delete the note.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-19 to delete inserted Note from SR 3.4.10.1.
 - 2) Revised proposed ITS page 3.4.10-2 to reflect change in the markup.
 - 3) Revised NUREG-1430 Bases markup page B 3.4-49 to delete inserted Note discussion from SR 3.4.10.1 Bases.
 - 4) Revised proposed ITS Bases page B 3.4.10-4 to reflect changes in the Bases markup.
 - 5) Revised CTS markup page 16 to delete insertion of SR 3.4.10.1 Note.
 - 6) Revised 3.4BDOC-L17 to delete reference to SR 3.4.10.1 Note.
-

Comment 3.4B-04

ITS Basis 3.4.11 Applicable Safety Analysis - Insert B3.4-59A
STS 3.4.12 Action A
STS Bases 3.4.12 Action A.1 and B.1
DOD 6

STS 3.4.12 Required Action A limits the number of makeup pumps capable of injecting into the RCS. DOD 6 states that retention of the Required Action A is not required because no such explicit requirements are included in the CTS. ITS Basis 3.4.11 Applicable Safety Analysis on Insert B3.4-59A states that the analyses demonstrate that HPI transients involving one HPI pump can be accommodated by the ERV without exceeding the maximum allowable pressure. The insert also discusses that vent capability is required to ensure that the maximum allowable pressure is not exceeded in the event of full opening of the makeup control valve while one makeup pump is running. These statements imply that the LTOP safety analysis considered the number of makeup/HPI pumps in the vent capability analysis. Comment: Provide additional information on the number of makeup/HPI pumps used in the safety analysis for LTOP. If the safety analysis limits the number of makeup/HPI pumps, provide justification for not including the pump limitation in the ITS.

- Response**
- Revised 3.4BDOD-06 to provide additional information on makeup pump requirements in the LTOP analysis, and to provide justification for not incorporating the NUREG-1430 LCO 3.4.12 requirements associated with limiting makeup pumps in the ITS.
-

Comment 3.4B-05

ITS LCO 3.4.11
ITS Bases LCO 3.4.11
STS LCO 3.4.12
STS 3.4.12 Applicability Note
CTS 3.1.2.11
DOD 6

STS LCO 3.4.12.a and b contain specific requirements for pressure relief capacity including specific values for the PORV setpoint and the RCS vent size. ITS LCO 3.4.11.d does not contain specific values for the required number of ERVs, the ERV setpoint, or the required RCS vent size. ITS Bases LCO 3.4.11 provides information about the required ERVs and ERV setpoint. It also provides examples of methods for venting the RCS, however it does not provide a specific criteria that must be met for a vent path to be acceptable. STS SR 3.4.12.5 verifies PORV block valve is open and SR 3.4.12.6 verifies an RCS vent ≥ 75 square inch. ITS SR 3.4.11.4 verifies OPERABLE pressure relief capability. The specific requirements for PORV operability and vent size are described in ITS Bases SR 3.4.11.4. The ITS deviates from the STS by not maintaining information concerning relief capacity and ERV setpoints.

STS 3.4.12 Applicability Note requires that the CFT only be isolated if CFT pressure is greater than or equal to the maximum RCS pressure for existing RCS temperature allowed by the pressure and temperature limit curves provided in the PTLR. ITS LCO 3.4.12.c requires each pressurized core flood tank (CFT) be isolated. ITS Bases LCO 3.4.11 contains the specific information on when a CFT is considered pressurized. The information in the Bases is consistent with STS 3.4.12 Applicability Note. ITS deviates from the STS by not maintaining information defining when a CFT is considered pressurized.

Comment: Include the required ERVs, ERV setpoint, and criteria for an acceptable RCS vent path in ITS LCO 3.4.11, SR 3.4.11.4. Include the conditions when a CFT is considered pressurized in the ITS.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-22 such that the ITS will more closely resemble the NUREG. Applicability Note for CFT isolation has been moved to LCO Notes. ERV Setpoint has been added to LCO.
 - 2) Revised proposed ITS page 3.4.11-1 to reflect changes in the markup.
 - 3) Revised NUREG-1430 Bases page Insert B3.4-61A to reflect changes in the LCO.
 - 4) Revised proposed ITS pages B 3.4.11-4, and B 3.4.11-5 to reflect changes in the NUREG-1430 Bases markup.
 - 5) Revised CTS markup page 18a to reflect the changes in the proposed LCO 3.4.11 markup.
 - 6) Revised 3.4BDOC-A12 to revise references between the CTS and ITS.
 - 7) Revised 3.4BDOD-06 to provide additional clarifications.
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Comment 3.4B-06

ITS 3.4.11 Required Action C and D
STS 3.4.11 Required Action G and H
STS Bases 3.4.11 Required Action G.1, H.1 and H.2
DOD 6

STS 3.4.11 Required Action H requires that if Required Action G.1 is not met within the required Completion Time then makeup tank level is to be reduced AND the low low makeup tank level interlock to the borated water storage tank suction valves is to be deactivated. ITS 3.4.11 Required Action D only requires that the makeup tank level be reduced to ≤ 73 inches. DOD 6 does not explain why STS 3.4.11 Required Action H.2 to deactivate the low low makeup tank level interlock to the borated water storage tank suction valves is not included in ITS 3.4.11. Comment: Provide information why STS 3.4.11 Required Action H.2 was not incorporated into the ITS.

Response Revised 3.4BDOD-06 to include a discussion that ANO-1 is not equipped with a low low makeup tank level interlock to the BWST suction valves, and that NUREG-1430 Required Action H.2 is not incorporated in the proposed ITS.

Comment 3.4B-07

ITS 3.4.11 Action E
STS 3.4.12 Action C and D
STS 3.4.12 Bases Required Actions C.1, D.1 and D.2
DOD 6

STS 3.4.12 Action C requires that an unisolated CFT, which is pressurized to \geq the maximum RCS pressure allowed in the PTLR, be isolated within one hour. STS 3.4.12 Action D requires that if Action C cannot be completed within the Completion Time then specific actions are required to be performed. ITS 3.4.11 Action E requires that if the LCO cannot be met for conditions other than Actions A through E then immediately initiate action to restore compliance with the LCO. ITS does not provide a time limit on isolating the CFT or any actions if compliance with the LCO cannot be restored. Comment: Include a time limit for isolating a pressurized CFT and required actions if the CFT cannot be isolated within required Completion Time.

Response The ANO-1 CTS does not contain a specific action to be performed if the CFT isolation valves are not closed with the MOV circuit breakers opened. ANO-1's current practice interprets that an action to immediately verify the CFT valves are closed with the MOV circuit breakers open is required. The proposed ITS retains this current operating license practice, and is consistent with the Required Actions specified in NUREG-1430 Condition B for HPI activated, which also requires an immediately initiate action statement with no limit on the Completion Time. This is considered to be a plant specific change, based on ANO-1 current practice. No changes are required to the ITS submittal.

Comment 3.4B-08

ITS 3.4.11 Action E
STS 3.4.12 Action I
DOD 6

STS 3.4.12 Action I lists the conditions of pressurizer level being greater than [220] inches AND PORV inoperable, OR LTOP System inoperable for any reason other than Condition A through Condition H. ITS 3.4.11 Action E Condition is LCO requirements not met for any reason other than Condition A through Condition D. ITS 3.4.11 Action E requires that if the LCO cannot be met for conditions other than Actions A through E then immediately initiate action to restore compliance with the LCO. ITS does not provide a time limit for restoring compliance with the LCO nor does it provide an alternative if LCO compliance cannot be restored. Comment: Provide a Completion Time for restoring compliance with the LCO. Also provide required actions and completion time if LCO compliance restoration cannot occur.

Response The ANO-1 CTS does not contain a specific actions to be performed if the conditions are not met. ANO-1's current practice interprets that an action to immediately verify compliance with the conditions is required. The proposed ITS retains this current operating license practice, and is consistent with the Required Actions specified in NUREG-1430 Condition B for HPI activated, which also requires an immediately initiate action statement with no limit on the Completion Time. This is considered to be a plant specific change, based on ANO-1 current practice. No changes are required to the ITS submittal.

Comment 3.4B-09

ITS SR 3.4.11.5, SR 3.4.11.6
STS 1.4, Example 1.4-3.
DOD 6

ITS SR 3.4.11.5 and SR 3.4.11.6 contain a Note stating that the SR is only applicable when ERV is credited for pressure relief capability. This Note allows the ERVs to not be tested within the 18 month frequency if they are not credited for pressure relief capability. However, the SR does not specify when SR will be required to be performed if the SR is not performed at an 18 month frequency. STS Example 1.4-3 identifies the format for conditions similar to ITS SR 3.4.11.5 and SR 3.4.11.6. Comment: Include conditions when the SR is required to be performed if it is not performed at an 18 month frequency.

Response

- 1) Revised NUREG-1430 markup page Insert 3.4-25A to delete the SR note.
- 2) Revised proposed ITS page 3.4.11-3 to reflect the change in the markup.
- 3) Revised CTS markup page 73b to delete incorporation of SR 3.4.11.6 and Note.
- 4) Revised 3.4BDOC-A12 to delete discussion of the addition of the ITS SR 3.4.11.5 and SR 3.4.11.6 Notes.

Comment 3.4B-10

ITS SR 3.4.11.1, SR 3.4.11.2, and SR 3.4.11.3
DOD 6

ITS SR 3.4.11.1, SR 3.4.11.2, and SR 3.4.11.3 have Notes indicated when the SR are not required to be performed. These Notes are redundant to notes in ITS LCO 3.4.11.

Comment: Delete the Notes in the SRs.

- Response**
- 1) Revised CTS markup page 18A to delete insertion of the Notes associated with ITS SRs 3.4.11.1, 3.4.11.2, and 3.4.11.3.
 - 2) Revised NUREG-1430 markup page Insert 3.4-25A to show deletion of the proposed SR notes.
 - 3) Revised proposed ITS page 3.4.11-3 to reflect changes in markup.
 - 4) Revised NUREG-1430 Bases markup page Insert B 3.4-65A to show deletion of the proposed SR notes and deleted Insert B 3.4-65B.
 - 5) Revised propose ITS Bases page B 3.4.11-7 to reflect the changes in the Bases markup pages.
-

Comment 3.4B-11

ITS SR 3.4.11.5
STS SR 3.4.12.7, 1.1
DOD 6

STS SR 3.4.12.7 requires a CHANNEL FUNCTIONAL TEST be performed for each PORV. ITS SR 3.4.11.5 requires a functional test of each ERV be performed.

“Functional test” is not defined by the STS or ITS. Comment: Revise ITS SR 3.4.11.5 to use STS defined terminology for the test.

- Response**
- 1) Revised NUREG-1430 markup page Insert 3.4-25A to show deletion of Channel Functional Test and retention of Channel Calibration as SR 3.4.11.5.
 - 2) Revised proposed ITS page 3.4.11-3 to reflect changes in markup.
 - 3) Revised 3.4BDOD-6 to discuss the deletion of Channel Functional Test and retention of Channel Calibration as SR 3.4.11.5.
 - 4) Revised NUREG-1430 Bases markup pages B 3.4-66 and B 3.4-67 and deleted Insert B 3.4-66B for consistency with SR markup.
 - 5) Revised proposed ITS page 3.4.11-7 to reflect changes in markup.
 - 6) Revised CTS markup page 18a to delete incorporation of SR 3.4.11.6.
 - 7) Revised 3.4BDOC-M3 to delete reference to SR 3.4.11.6.
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Comment 3.4B-12

ITS SR 3.4.11.5 and SR 3.4.11.6
CTS Table 4.1-1 Item 60
DOC LA2

CTS Table 4.1-1 Item 60 requires testing and calibration of the Low Temperature Overpressure Protection Alarm Logic. ITS SR 3.4.11.5 requires an ERV functional test and SR 3.4.11.6 requires an ERV opening circuitry CHANNEL CALIBRATION. DOC LA2 indicates CTS Table 4.1-1 Item 60 is being relocated to the TRM. It is not clear whether the testing in CTS Table 4.1-1 Item 60 should be considered part of the testing that will be performed for ITS SR 3.4.11.5 and SR 3.4.11.6. Comment: Provide additional information if testing included in CTS Table 4.1-1 Item 60 will be part of ITS SR 3.4.11.5 and SR 3.4.11.6. Provide appropriate change documentation for the information being retained in ITS.

Response Revised 3.4BDOC-LA2 to provide more information the Table 4.1-1 #60 requires calibration of the LTOP alarm circuitry, and that this circuitry is not associated with the operation of the ERV.

Comment 3.4B-13

ITS SR 3.4.12.1, 3.4.12.2 and 3.4.12.3
STS SR 3.4.16.1, 3.4.16.2 and 3.4.16.3
CTS Table 4.1-3 Item 1.b, 1.c and 1.g
DOC L11

CTS Table 4.1-3 Item 1.b requires Gross Activity Determination at a frequency of 3 times/week and at least every third day. ITS SR 3.4.12.1 requires this surveillance performance each 7 days. CTS Table 4.1-3 Item 1.c requires Gross Radioiodine Determination on a weekly frequency. ITS SR 3.4.12.2 requires this surveillance performance every 14 days. CTS Table 4.1-3 Item 1.g requires Radiochemical Analysis for Q Determination at a frequency of Monthly. ITS SR 3.4.12.3 requires surveillance performance every 184 days. These changes are consistent with the STS and are discussed in DOC L11. These changes are surveillance test interval extensions and are less restrictive than the CTS. Comment: Provide justification why the expanded surveillance test intervals are acceptable to ANO-1.

Response Revised 3.4BDOC-L11 to provide additional justification for the proposed change in surveillance frequencies.

Comment 3.4B-14

ITS SR 3.4.12.1, 3.4.12.2 and 3.4.12.3
STS SR 3.4.16.1, 3.4.16.2 and 3.4.16.3
CTS Table 4.1-3 Item 1.b, 1.c and 1.g. Notes (1), (2), (3), (6)
DOC L11

CTS Table 4.1-3 Item 1.b is modified by Note (1) which requires increased frequency of sampling and analyzing whenever gross radioactivity concentration exceeds specific limits. ITS SR 3.4.12.1 did not retain this requirement.

CTS Table 4.1-3 Item 1.g is modified by Note (2) which requires radiochemical analysis and calculation of Q and iodine isotopic activity when measured gross activity changes by a specific value. ITS SR 3.4.12.3 did not retain this requirement.

CTS Table 4.1-3 Item 1.c is modified by Note (3) which requires the radioiodine concentration be determined if the measured gross radioactivity concentration changes by a specific value. ITS SR 3.4.12.2 did not retain this requirement.

CTS Table 4.1-3 Items 1.b and 1.c are modified by Note (6) which requires additional sampling prior to criticality if specific criteria are met. This requirement was not retained in ITS SR 3.4.12.1 and SR 3.4.12.2.

These items were not specifically discussed in DOC L11. ITS SR 3.4.12.1, SR 3.4.12.2, and SR 3.4.12.3 are consistent with the STS.

Comment: Provide justification for not incorporating these requirements in the ITS.

Response Revised 3.4BDOC-L11 to discuss the deletion of these Notes

Comment 3.4B-15

ITS Bases 3.4.12
CTS Table 4.1-3 Note (2)
DOC LA1

CTS Table 4.1-3 Note (2) specifies the gamma energy per disintegration for the those radioisotopes determined to be present shall be as given in "Table of Isotopes" (1967) and beta energy per disintegration shall be as given in USNRDL-TR-802 (Part II) or other references using the equivalent values for the radioisotopes. DOC LA1 indicates this information was incorporated into ITS Bases 3.4.12. This information could not be located in ITS Bases 3.4.12.

Comment: Provide additional information where this information was relocated or justification for not incorporating the information into the ITS.

Response

- 1) Revised NUREG-1430 Bases page Insert B3.4-92A and Bases page 3.4-93 to incorporate CTS Table 4.1-3 Note 2 statements and references.
- 2) Revised proposed ITS page B 3.4.12-5 to reflect changes in the markup.
- 3) Revised 3.4BDOD-07 to discuss the addition of this information.

Comment 3.4B-16

ITS SR 3.4.12.1
ITS Bases SR 3.4.12.1
STS SR 3.4.16.1
STS Bases SR 3.4.16.1
CTS Table 4.1-3 Item 1.b

STS SR 3.4.16.1 verifies reactor coolant gross specific activity $\leq 72/Q$ $\mu\text{Ci/gm}$. ITS SR 3.4.12.1 deleted "gross" from the SR. CTS Table 4.1-3 Item 1.b identifies the CTS requirement as Gross Activity Determination. No DOD was provided to justify the removal. Comment: Provide justification for deletion of "gross" from the surveillance requirement.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-38 to retain "gross."
 - 2) Revised proposed ITS page 3.4.12-1 to reflect the change in markup.
 - 3) Revised NUREG-1430 Bases markup page B 3.4-91 and Insert B3.4-91A to retain "gross" in ITS 3.4.12.1.
 - 4) Revised proposed ITS page 3.4.12-4 to reflect change in Bases markup.
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Comment 3.4B-17

ITS 3.4.14 Applicability
STS 3.4.14 Applicability
DOD 20

ITS 3.4.14 moved the Note from the Applicability to LCO which deviates from the STS. DOD 20 stated this change was necessary to avoid confusion in the application of ITS SR 3.0.4. This is unnecessary because applying the note during a power change that meets the criteria, does not constitute a MODE change. The note should remain part of ITS 3.4.14 Applicability. ITS SR 3.0.4 allows for exceptions to Applicability statements. Comment: Maintain the note in the applicability.

- Response**
- 1) Revised NUREG-1430 markup page 3.4-30 to retain Applicability Note.
 - 2) Revised 3.4BDOD-20 to show as not used.
 - 3) Revised proposed ITS page 3.4.14-1 to reflect change in markup.
 - 4) Revised NUREG-1430 Bases markup page B 3.4-76 to retain Applicability Note discussion.
 - 5) Revised proposed ITS pages B 3.4.14-2 and B 3.4.14-3 to reflect changes in Bases markup.
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Comment 3.4B-18

ITS 3.4.14 Action A
STS 3.4.14 Action A Note
DOD 13

STS 3.4.14 Action A Note mandates each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.14.1 and be on the RCS pressure boundary [or the high pressure portion of the system]. ITS 3.4.14 Action A did not retain the Note. DOD 13 justified the change because the MOVs that are used for isolation are not leak tested in accordance with SR 3.4.14.1 however the check valves used for isolation are leak tested. The Note should be revised to reflect that only the check valves used for isolation are required to meet SR 3.4.14.1. Comment: Modify STS 3.4.14 Action A Note to reflect only the check valves are required to meet SR 3.4.14.1 and retain in ITS 3.4.14 Action A.

Response Revised 3.4BDOD-13 to provide additional discussion justifying the deletion of the Note.

Comment 3.4B-19

ITS LCO 3.4.11, Required Action A, SR 3.4.11.1
ITS Bases 3.4.11
DOD 6

ITS LCO 3.4.11.a requires that pressurizer level be such that the unit is not in a water solid condition. ITS Bases 3.4.11 Background states that the pressurizer level is maintained to accommodate a coolant surge and prevent a rapid pressure increase and allow the operator time to stop the increase. ITS Bases 3.4.11 Safety Analysis states pressurizer level is also limited to ensure that increasing pressure during a transient will be slow enough to preclude exceeding pressure limits within the 10 minutes assumed to be required for operator action to mitigate the transient. ITS Bases 3.4.11 LCO just specifies that pressurizer coolant level is required to be below a level which represents a water solid condition. ITS Bases SR 3.4.11.1 states that verifying pressurizer level at ≤ 105 inches when RCS pressure > 100 psig or ≤ 150 psig (should be inches) when RCS pressure is ≤ 100 psig ensures that the unit is not in a water solid condition and that a cushion of sufficient size is available to reduce the rate of pressure increase from potential transients. While the ITS Bases does discuss that the maximum pressurizer level setpoints stated in the Bases do allow for operator Response time, it is confusing to have the ITS state that maximum allowable level is a not being in a solid water condition. The ITS should state the maximum allowable pressurizer level, based on RCS pressure, in inches as read on control room instrumentation. Comment: Correct ITS Bases SR 3.4.11.1 to designate pressurizer level in inches instead of psig. Revise ITS LCO to reflect actual pressurizer level values.

Response 1) Revised NUREG-1430 Bases markup page Insert B3.4-65A to correct units to indicate ≤ 150 inches when RCS pressure is ≤ 100 psig, this corrects a typo that appeared only in the insert.

- 2) Revised 3.4BDOD-06 to provide additional discussion on retaining the CTS requirement that the RCS not be operated in a water solid condition when the RCS pressure boundary is intact.
-

Comment 3.4B-20

ITS Bases SR 3.4.12.1, SR 3.4.12.3, References
STS Bases SR 3.4.16.1, SR 3.4.16.3
DOD 7

ITS Bases SR 3.4.12.1 revised the explanation of the how the surveillance was performed with information contained on Insert B3.4-91A. ITS Bases SR 3.4.12.1 revised the requirement for the plant to be in MODE 1 equilibrium condition and the description of Q analysis. These changes are identified as being DOD 7. DOD 7 justifies changes to STS 3.4.16 Bases Applicable Safety Analyses and References sections. It does not reference STS SR 3.4.16.1 or SR 3.4.16.3.

ITS Bases References does not have any changes that are referenced to DOD 7.

Comment: Provide justification for the change to STS Bases SR 3.4.16.1 and SR 3.4.16.1 or change DOD 7 to justify the changes.

- Response**
- 1) Revised 3.4BDOD-07 to provide additional detail on changes to the NUREG 3.4.16 Bases Applicable Safety Analyses and SR 3.4.16.1 discussions.
 - 2) Revised NUREG-1430 Bases markup page B 3.4-93 to show Reference 2 added by 3.4BDOD-07.
-

Comment 3.4B-21

ITS Bases Applicability 3.4.13
STS Bases Applicability 3.4.13

STS B3.4.13 states "LCO 3.4.14, 'RCS Pressure Isolation Valve (PIV) Leakage,' measures leakage through each individual PIV and can impact this LCO." ITS B 3.4.14 revises the STS to state "LCO 3.4.14, 'RCS Pressure Isolation,' ..." This is not the correct title for LCO 3.4.14.

Comment: The correct title of LCO 3.4.14 should be used in the bases.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.4-71 to incorporate the correct LCO 3.4.14 title.
 - 2) Revised proposed ITS Bases page B 3.4.13-3 to reflect the change in the Bases markup.
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Comment 3.4B-22

ITS SR 3.4.14.3 Bases
STS SR 3.4.14.3 Bases
CTS 3.5.1.7
DOC LA1
DOD 16 and 24

CTS 3.5.1.7 specifies the relief valve setting for the DHR system shall be equal to or less than 450 psig. DOC LA1 indicates this information is being incorporated into ITS Bases SR 3.4.14.3. LA1 states the information, that is being removed from CTS and incorporated into ITS Bases, provides details of design or process which are not directly pertinent to the actual requirement but rather describe additional unnecessary details such as an acceptable method of compliance. CTS 3.5.1.7 is actual requirements concerning operation of the plant and should either be incorporated in Technical Specifications or other plant documentation. ITS Bases is not an appropriate location for a plant setpoint for a relief valve that is not part of an LCO. DOD 16 and 24 do not justify deviating from STS to incorporate information about the DHR relief valve. Comment: Provide additional information explaining why the information is being incorporated into ITS Bases.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.4-80 to delete the incorporation of the DHR relief valve setting.
 - 2) Revised proposed ITS Bases Page B 3.4.14-5 to reflect the change in the markup.
 - 3) Revised 3.4BDOC-LA1 and 3.4BDOC-LA2 to show DHR relief valve setting relocated to the TRM.
 - 4) Revised CTS markup page 42a to show DHR relief valve setting relocated to the TRM.

Comment 3.4B-23

CTS 3.1.1.3.B
DOC L15

CTS 3.1.1.3.B requires when the reactor is subcritical, one pressurizer code safety valve be operable if all reactor coolant system openings are closed, except for hydrostatic tests according to ASME Boiler and Pressure Vessel Code, Section III. CTS 3.1.1.3.B also provides that Specification 3.0.3 is not applicable. DOC L15 does not explain the removal of "if all reactor coolant system openings are closed, except for hydrostatic tests in accordance with ASME Boiler and Pressure Vessel Code, Section III." DOC L15 also does not explain not retaining the provision that Specification 3.0.3 is not applicable. Comment: Provide applicable change documentation for not retaining the information in ITS.

- Response**
- 1) Revised CTS markup page 16 to show the retention of the exception for one code safety to be operable during hydrostatic testing, and the LCO 3.0.3 exception.
 - 2) Revised 3.4BDOC-L15 to discuss the deletion of the statement concerning RCS integrity.
 - 3) Revised 3.4BDOD-03 to discussion retention of the CTS exceptions.

- 4) Revised NUREG-1430 markup page 3.4-18 to reflect the retention of the CTS exceptions as Notes 3 and 4.
 - 5) Revised proposed ITS page 3.4.10-1 to reflect the changes in the markup.
 - 6) Revised NUREG-1430 Bases markup page Insert B 3.4-47C to incorporate a discussion of the Notes.
 - 7) Revised proposed ITS pages B 3.4.10-2 and B 3.4.10-3 were revised to reflect the changes in the markup.
-

Comment 3.4B-24

ITS Bases 3.4.13, 1.1
CTS 3.1.6.3.a
DOC LA1 (Bases)

CTS 3.1.6.3.a contains a description of leakage through a non-isolable fault in the reactor coolant system strength boundary and lists examples of this leakage. ITS 3.4.13 uses the terminology of pressure boundary leakage. DOC LA1 (Bases) which is identified for this change, states this information is relocated to the ITS Bases 3.4.13. ITS Bases 3.4.13 does not contain the details included CTS 3.1.6.3.a for non-isolable reactor coolant boundary leakage. This information is contained in the ITS definition for LEAKAGE. Comment: Provide revised documentation for disposition the leakage description in CTS 3.1.6.3.a.

- Response**
- 1) Revised CTS markup page 27-1 to show portion of 3.1.6.3.a associated with strength boundary is addressed in ITS Section 1.0.
 - 2) Revised 3.4BDOC-LA1 to delete CTS 3.1.6.3.a from list of relocated specifications.
-

Comment 3.4B-25

CTS 3.1.6.1, 3.1.6.6
DOC L19, L14, M13, A4

The CTS markup contained duplicate page 27, one marked 27-1 and one 27-2. CTS 3.1.6.1 and 3.1.6.6 are marked with different DOCs on each page. DOC L19 does not clearly describe how CTS 3.1.6.1 and 3.1.6.6 are being dispositioned. Comment: Provide additional information on what action is being taken with CTS 3.1.6.1 and 3.1.6.6.

- Response**
- CTS 3.1.6.8 provides requirements associated with leakage from sources such as RCP seals and system valves that are returnable to the RCS. This requirement is shown as relocated to the Technical Requirements Manual (TRM). CTS 3.1.6.8 also states that this leakage shall not be subject to the consideration of Specification 3.1.6.1 and 3.1.6.6 except that such losses when added to leakage shall not exceed 30 gpm. The purpose of CTS markup page 27-2 is to show that the CTS Specifications associated with CTS 3.1.6.8 are being deleted. This was considered necessary because CTS 3.1.6.1 and 3.1.6.6 are also associated with CTS 3.1.6.2, 3.1.6.3.a, 3.1.6.3.b, and 3.1.6.7, much of which are retained in the ITS. CTS markup page 27-2 was provided to make the markup more legible.

- 1) Revised CTS markup pages 27-1 and 27-2 to show all CTS specifications associated with the relocation of CTS 3.1.6.8 on page 27-2.
- 2) Revised 3.4BDOC-L19 to include a statement that the DOC only addresses those CTS requirements associated with the relocation of the 30 gpm limit.

Comment 3.4B-26

ITS SR 3.4.14.1
STS SR 3.4.14.1
CTS Table 3.1.6.8
DOC L5

CTS Table 3.1.6.8 Footnote (a)1 Limits leakage rates to ≤ 1.0 gpm and Footnote (a)2 and (a)3 allow leakage rates between 1 gpm and 5 gpm provided specific criteria are met. The maximum allowable leakage rate of 5.0 gpm is specified in Footnote (a)4 which is the only leakage rate is being retained in ITS SR 3.4.14.1. DOC L5 states that the information in Footnote (a)1, (a)2, and (a)3 is being omitted in the ITS. DOC L5 states this information is important to consider for determination of maintenance and corrective actions. DOC L5 did not indicate if this information was being retained in plant documentation. Comment: Provide additional information if the requirements are being retained in plant documentation.

Response Revised 3.4BDOC-L5 to provide information on where these requirements will be controlled.

Comment 3.4B-27

CTS Bases 3.1.1
CTS 3.5.1.4
CTS Table 4.1-2 Items 5 and 10
CTS Table 4.1-3 Items 1.f, 5.a and Notes 5, 7 and 10
DOC R
Justification for Specification Relocation for 3.1.5.4 (App. A, pg. 5)
Justification for Specification Relocation for 4.1-2.5 and 4.1.2.10 (App. A, pg. 25)
Justification for Specification Relocation for 4.1-3.1.f and 4.1.3.5.a (App. A, pg. 27)

CTS Bases 3.1.1 has two paragraphs identified as relocations to the TRM. No items in CTS 3.1.1 are identified for relocation. Only complete LCOs are to be relocations.

CTS 3.1.5.4, CTS Table 4.1-2 Items 5 and 10, and CTS Table 4.1-3 Items 1.f, 5.a were identified as relocated specifications. ANO1 provided justifications for Specification Relocation and provided adequate justification for removal from the CTS. However, only removing complete LCOs are allowed to be relocations.

Comment: Provide correct classification for the changes.

Response The ANO-1 CTS is a custom Tech Spec. Many SRs do not have LCOs and many LCOs do not have SRs. These relocations were "complete" relocations, in that all associated information was addressed in the relocation.

Comment 3.4B-28
CTS 3.1.3.7
DOC L6
NSHC 3.4B L6

CTS 3.1.3.7 provides the required actions if minimum conditions for criticality (CTS 3.1.3.1 through 3.1.3.6) are not met. In the CTS markup for conversion to ITS 3.4.9 the changes to CTS are identified with DOC L6. The No Significant Hazard Consideration Statement for DOC L6 discusses reactor coolant temperature instead of pressurizer level and required pressurizer heaters. Comment: Provide a No Significant Hazard Consideration Statement that addresses pressurizer level and required pressurizer heaters.

Response Revised 3.4BNSHC-L6 to address the Completion Time extension for pressurizer level and emergency-powered pressurizer heaters.

Comment 3.4B-29
CTS 4.27
DOC L8

CTS 4.27.3 requires that the required steam generators shall be determined operable by verifying the secondary side water level to be ≥ 20 inches on the startup range at least once per 12 hours. In the ITS, the requirement would be to determine that the steam generators were operable once per 12 hours with no method of verification specified in the technical specification. This change is identified by DOC L8. However, DOC L8 does not discuss this change. Comment: Provide justification for the removal of the method of verification of steam generator operability.

Response See Response to Comment 3.4A-12 for resolution of this comment.

Comment 3.4B-30
CTS 4.27
DOC M13

The marked up CTS 4.27 adds SR 3.4.7.3 with note and SR 3.4.8.2 with note. This is identified by DOC M13. However, DOC M13 does not discuss the addition of these two surveillance requirements. Comments: Provided justification for the addition of SR 3.4.7.3 with note and SR 3.4.8.2 with note.

Response CTS markup page 110aa has been removed from this subsection. The page should be included only in subsection 3.4A.

Comment TS 3.4.7.b

In MODE 5 with the reactor coolant system (RCS) loops filled, the primary function of the reactor coolant is the removal of decay heat and transfer this heat either to the steam generators (SG) secondary side coolant or component coolant water through decay heat removal heat exchangers. Current B&W STS 3.4.7 allows both DH system and SGs for decay heat removal. Specifically, B&W STS 3.4.7.b requires that "the secondary side water level of each steam generator (SG) shall be $\geq 50\%$." The licensee proposed to change B&W STS 3.4.7.b to "The steam generator(s) (SG) shall be OPERABLE." The licensee further defined OPERABILITY of SGs in associated Bases. In "INSERT B 3.4-30A" and "INSERT B3.4-31A", the licensee indicated that the SG(s) is OPERABLE and the limiting condition for operation of SGs is established if one motor driven EFW pump is available with a source of makeup water and necessary even if there is little or no secondary side water level.

However, the licensee did not provide sufficient information to support its position regarding the effectiveness of SGs proposed in "INSERT B.3.4-31A" for decay heat removal. For the staff to complete its review, the licensee is requested to provide the results of analyses or applicable test data to demonstrate that the flow from one motor driven EFW pump as stated in the "INSERT B3.4-31A" is sufficient to remove decay heat for condition with no water in the SG secondary side. The information provided should include the following: (1) major assumptions used in the analyses or test conditions for the applicable data (especially, decay heat power level, RCS and SG temperatures, EFW flow rate and its flow distribution, and EFW injection location), and (2) a discussion of the methodology used in the analyses and a technical justification for the acceptability of the methodology.

In addition, the Proposed TS 3.4.7.b does not satisfy the requirements of 10 CFR 50.36(c)(2)(ii)(D) since it relies on the TS Bases for the definition of SG operability. As stated in B&W STS B 3.4.7, RCS loops at MODE 5 with loops filled have been identified in the NRC policy statement as important contributors to risk reduction. For the MODE 5 operation with RCS loops filled, the licensee relied on the SGs for decay heat removal. In accordance with the 10 CFR 50.36(c)(2)(ii)(D) requirements, a limiting conditions for operation (LCO) of SGs shall be established in the TS. 10 CFR 50.36(a) further states that "...A summary statement of the bases or reasons for such specifications ... shall not become a part of the technical specifications."

The licensee has proposed to use the term "OPERABLE SGs" in an LCO in TS 3.4.7.b and proposed to further define the "OPERABLE SGs" in the associated Bases for completion of the LCO. Since the Bases, according to 10 CFR 50.36(a), are not part of the TS, the proposed TS 3.4.7.b is not a complete TS LCO. To satisfy the requirements of 10 CFR 50.36(c)(2)(ii)(D), the licensee should propose a complete LCO for SGs in TS 3.4.7.b without relying on a definition of "OPERABLE SGs" in the Bases.

Response See the Response to Comment 3.4A-12 for resolution of this comment.

**Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions
ITS Section 3.4: Reactor Coolant System**

Comment ANO-8

The Bases markup for 3.4.7 - LCO on page B 3.4-32 shows a reference to DOD-24. DOD-24 is shown as not used. The changes appear to be editorial in nature and the reference to DOD-24 should be deleted. Section 3.4A.

Response Revised NUREG-1430 Bases markup page B 3.4-32 to remove DOD-24 from the markup.

Comment ANO-247

Generic change TSTF-286, Rev 2, "Define 'Operations Involving Positive Reactivity Additions'," has been approved by the NRC. Evaluate for inclusion in the ANO-1 ITS Section 3.4A.

- Response**
- 1) Revised NUREG-1430 markup pages 3.4-7, 3.4-8, 3.4-9, 3.4-10, 3.4-11, 3.4-12, 3.4-14, and 3.4-15 to show incorporation TSTF-286, Rev 2.
 - 2) Drafted 3.4ADOD-30 to discuss incorporation of TSTF-286, Rev 2.
 - 3) Revised proposed ITS pages 3.4.5-1, 3.4.5-2, 3.4.6-1, 3.4.6-2, 3.4.7-1, 3.4.7-2, 3.4.8 1, and 3.4.8-2 to reflect changes in markup pages.
 - 4) Revised NUREG-1430 Bases markup pages B 3.4-22, B 3.4-23, B 3.4-24, B 3.4-26, B 3.4-28, B 3.4-31, B 3.4-33, B 3.4-36, and Inserts B3.4-37A and B3.4-37B to show incorporation TSTF-286, Rev 2.
 - 5) Revised proposed ITS Bases pages B 3.4.5-2, B 3.4.5-3, B 3.4.6-1, B 3.4.6-3, B 3.4.7-2, B 3.4.7-4, 3.4.8-2, and 3.4.8-3 to reflect changes in Bases markup pages.
 - 6) Revised CTS markup pages 16, 16a-1, 16a-2, and 16a-3 to reflect the change to the ITS Notes and Required Actions and show these changes as less restrictive.
 - 7) Drafted 3.4ADOC-L11 to discuss the less restrictive aspects of TSTF-286, Rev 2.
 - 8) Drafted 3.4ANSHC-L11 to evaluate the less restrictive aspects of this change.
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Comment ANO-248

Generic change TSTF-367, Rev 0, "Insert Reference to Criterion 4," has been approved by the NRC. Evaluate for inclusion in the ANO-1 ITS Section 3.4A.

- Response**
- 1) Revised 3.4ADOD-28 to discuss the incorporation of TSTF-367.
 - 2) Revised NUREG-1430 Bases markup pages B 3.4-25, B 3.4-31, and B 3.4-35 have been revised to reflect the incorporation of TSTF-367.
 - 3) Revised proposed ITS Bases pages 3.4.6-1, 3.4.7-1, and 3.4.8-1 have been revised to reflect the changes in the NUREG-1430 Bases markups.
-

Comment ANO-249

Generic change TSTF-352, Rev 1, "Provide Consistent Completion Time to Reach MODE 4," has been approved by the NRC. Evaluate for inclusion in the ANO-1 ITS 3.4B.

- Response**
- 1) Revised NUREG-1430 markup pages 3.4-16 and 3.4-18 to indicate incorporation of TSTF-352, Rev. 1.
 - 2) Revised proposed ITS pages 3.4.9-1 and 3.4.10-2.
 - 3) Revised NUREG-1430 markup pages B 3.4-43 and B 3.4-48, and Insert B3.4-48B to indicate incorporation of TSTF-352, Rev. 1.
 - 4) Revised proposed ITS pages B 3.4.9-4 and B 3.4.10-4.
 - 5) Drafted 3.4BDOD-36 to discuss incorporation of TSTF-352, Rev. 1.
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Comment ANO-338

Evaluate TSTF-284, Rev 3 for inclusion in ITS Section 3.4B. The change revises the SR 3.4.12.6 SR Note to clarify met vs. performed.

- Response** NUREG-1430 SR 3.4.12.6 was not incorporated into the ITS in a form that requires this clarification. TSTF-284, Rev 3 is not incorporated in ITS 3.4.11.
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Comment 344

DOD-22 states that "LTOP System" is not terminology used at ANO. However, Operations procedure 1015.002, Decay Heat Removal and LTOP System Control," does use this terminology. LTOP System should be retained in the ITS Section 3.4B.

- Response**
- 1) Revised 3.4BDOD-22 to state that it is not used.
 - 2) Revised NUREG-1430 markup pages 3.4-22, 3.4-23, 3.4-24, 3.4-25, 3.4-26 and 3.4-27 to retain "LTOP System."
 - 3) Revised proposed ITS pages 3.4.11-1, 3.4.11-2, and 3.4.11-3 to reflect change in markup.
 - 4) Revised NUREG-1430 Bases markup pages (all) to retain "LTOP System."
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Arkansas Nuclear One - Unit 1
Improved TS Review NRC Comment Resolutions
ITS Section 3.5: Emergency Core Cooling Systems

Comment 3.5.1-1
CTS 3.3.6
DOC M2
ITS 3.5.1 Action B
DOD 1

In the event one Core Flood Tank (CFT) is inoperable for reasons other than boron concentration not within limits, CTS 3.3.6 would require initiating a reactor shutdown and being in the hot shutdown condition (subcritical by 1% $\Delta k/k$ with $T_{avg} \geq 525$ degrees F) within 36 hours, and in the cold shutdown condition (subcritical by 1% $\Delta k/k$ with $T_{avg} \leq 200$ degrees F) in an additional 72 hours. The CTS do not explicitly allow any time to restore the CFT to Operable status before requiring the initiation of a reactor shutdown. Following the example of CTS 3.0.3, however, it is reasonable to conclude that CTS would allow 1 hour to prepare for an orderly shutdown. This interpretation is consistent with the STS. In this same condition, STS 3.5.1 Action B would allow 1 hour to restore the CFT to Operable status before requiring a reactor shutdown (Mode 3 in 6 hours and Mode 3 with RCS pressure ≤ 800 psig in 12 hours). In contrast, corresponding ITS 3.5.1 Action B proposes to allow 6 hours to restore the CFT to Operable status before requiring, consistent with the STS, a reactor shutdown to Mode 3.

The proposed 6-hour Completion time when combined with the Completion Time to reach Mode 3 (for a total of 12 hours) is more restrictive than the CTS allowed time to reach Mode 3 (36 hours), but less restrictive than the STS (7 hours). However, the justification for the ITS's 6-hour Completion Time is not plant specific, and could apply to any B&W plant. In addition, it appears to be an unjustified relaxation of the CTS action requirements, because it increases the allowed delay in initiating a reactor shutdown.

Comment: Adopt the STS's 1-hour Completion Time. Otherwise, justify the proposed 6-hour Completion Time of ITS 3.5.1 Required Action B.1 as a less restrictive change, and after obtaining industry approval of this change as a generic change to NUREG-1430, Rev. 1, submit it to the staff for review. The proposed change may be approved if the staff finds it acceptable on a generic basis. In addition, because this change differs from both the CTS and the STS, it is considered a beyond scope change, and may require technical branch review.

Response CTS 3.3.6 states that in the event the conditions of Specification 3.3.3 cannot be met, except as noted in 3.3.7, reactor shutdown shall be initiated and the reactor shall be in hot shutdown condition (ITS MODE 3) within 36 hours and, if not corrected, in cold shutdown condition within an additional 72 hours. The CTS action is required for any condition (boron concentration, CFT level, CFT pressure, or discharge valve position) that renders a CFT inoperable. In the ITS, these actions have been revised to differentiate between inoperability due to boron concentration and due to other causes. The ANO-1

interpretation of CTS 3.3.6 is that in the event of an inoperable CFT, 36 hours is allowed to restore to operable, or be in hot shutdown, since the requirement to initiate a reactor shutdown does not have a time limit associated with it. The change to 72 hours to restore boron concentration in the ITS has been justified as a less restrictive change. For other inoperabilities, the ITS is more restrictive since the total time to be in MODE 3 (CTS Hot Shutdown) has been reduced from 36 hours to 12 hours.

Comment 3.5.2-1
CTS 3.3.6
ITS 3.5.2 Actions
JFD 5

The intent of the format and content of ITS 3.5.2 Actions, including the modification of STS 3.5.2 Condition B, appears acceptable, but the interplay between Actions A and B could become confusing with respect to tracking the Completion Time for Required Action A.1. However, the Actions of STS 3.5.2 in draft Revision 2 of the STS, based on an approved TSTF, have an improved presentation that precludes this concern, while essentially maintaining the same content and intent. Comment: Adopt the latest format of the Actions of STS 3.5.2, with appropriate changes to STS Required Actions B.2 and C.1 to account for the difference in Applicability.

- Response**
- 1) Drafted 3.5DOD-25 to identify incorporation of TSTF-325, Rev 0.
 - 2) Revised NUREG-1430 markup page 3.5-4 to show incorporation of TSTF-325, Rev 0.
 - 3) Revised proposed ITS page 3.5.2-1 to reflect changes in NUREG-1430 markup.
 - 4) Revised NUREG-1430 Bases markup pages B 3.5-15 and B 3.5-16 to show incorporation of TSTF-325, Rev 0.
 - 5) Deleted NUREG-1430 Bases markup insert B3.5-15A since this clarified the Condition A second entry Condition that is deleted by TSTF-325, Rev 0 and inserted markup insert B3.5-16A to incorporate new Condition C.
 - 6) Revised proposed ITS Bases pages B 3.5.2-5 and B 3.5.2-6 to reflect changes in NUREG-1430 markup.
 - 7) Deleted 3.5DOC-L9 since this justified the incorporation of the Condition A second entry Condition that is deleted by TSTF-325, Rev 0.
 - 8) Deleted 3.5NSHC-L9, due to the deletion of 3.5DOC-L9.
 - 9) Revised 3.5DOC-A11 to discuss the incorporation of LCO 3.5.2, Condition C.
 - 10) Revised CTS markup page 38-2 to delete the addition of the second entry Condition of LCO 3.5.2, Condition A, deleted reference to 3.5DOC-L9, and show the incorporation of LCO 3.5.2, Condition C.
 - 11) Revised 3.5DOD-05 to delete reference to the addition of Required Action B.2 and second entry Condition.
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Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions
ITS Section 3.5: Emergency Core Cooling Systems

Comment ANO-9

A revised calculation has determined that the existing equivalency between cubic feet and feet of indication for the CFTs was not correct. The correlation of volume to level contained in the 3.5.1 Bases for the CFTs should be revised from 11.98 ft and 14.04 ft to 11.95 ft and 14.00 ft. The CFT volume assumed in the safety analysis was not affected by this change. The revision only made a minor correction to the volume to feet equivalency.

- Response**
- 1) Revised NUREG-1430 Bases markup insert B 3.5-4A to incorporate the corrected values. Since the volume assumed in the safety analyses was not affected, no other changes to the NUREG-1430 markup are required.
 - 2) Revised proposed ITS page 3.5.1-3 to reflect the change to the Bases.
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Arkansas Nuclear One - Unit 1
Improved TS Review NRC Comment Resolutions
ITS Section 3.9: Refueling Operations

Comment 3.9-01

ITS LCO 3.9.1
STS LCO 3.9.1.a

STS LCO 3.9.1.a specifies that the boron concentration of the Reactor Coolant System, the refueling canal and the refueling cavity shall be maintained within the limit specified in the COLR. ITS LCO 3.9.1 deletes the refueling cavity from the LCO. Comment: No justification was provided for this deletion other than "edit" identified in the margin of the STS markup. Provide specific justification for deleting refueling cavity from the LCO.

Response

- 1) Drafted 3.9DOD-28 to discuss deletion of "refueling cavity."
 - 2) Revised NUREG-1430 markup page 3.9-1 to include 3.9DOD-28 in the markups.
 - 3) Revised NUREG-1430 Bases markup pages B3.9-1, B 3.9-2, B 3.9-3, and B 3.9-4 to include 3.9DOD-28 in the markups.
-

Comment 3.9-02

ITS 3.9.3 Reactor Building Penetrations
ITS Bases 3.9.3 LCO Section
STS 3.9.3 Containment Penetrations
CTS 3.8.7
DOC L1
DOD-1, DOD-3 and DOD-20

CTS 3.8.7 requires operability of "containment isolation valves." The STS terminology is changed from "containment penetrations" to "reactor building penetrations," to be consistent with CTS terminology. Comment: In adopting the STS while retaining the CTS terminology, the following is not clear:

- (1) Why are fluid system escape paths not covered by the ITS, the STS Bases refer to "potential escape paths" and not just "direct paths" as referred to by the ITS;
- (2) Why are single failures not considered in the safety analysis;
- (3) Why are reactor building purge isolation valves not included in the LCO statement;
- (4) In the SR 3.9.3.2 why are reactor building isolation valves and reactor building purge isolation valves not included (the note is not adequately addressed in Bases)?

Response

Item 1: Per phone call with the Reviewer on 2/5/01, The ITS 3.9.3 LCO Bases contain a sufficient level of detail and no further information is required. Item 2: Per discussions with the Reviewer during a 12/18/00 meeting, no further information is required. Item 3: Per discussions with the Reviewer during a 12/18/00 meeting, no further information is required. Item 4: Agreed to incorporate TSTF-284, Rev 3. See comment ANO-241 for details.

Comment 3.9-03

ITS 3.9.3 Reactor Building Penetrations
STS 3.9.3 Containment Penetrations
ITS 3.9.6 Refueling Canal Water Level
STS 3.9.6 Refueling Canal Water Level
CTS 3.8.6
DOD-15

ITS 3.9.3 and ITS 3.9.6 do not apply to conditions involving Core Alterations, as STS 3.9.3 and STS 3.9.5 do, because the CTS only applies during the handling of irradiated fuel in the reactor building. Comment: The STS definition of Core Alteration only includes evolutions involving fuel or reactivity control components. It is therefore logical and consistent with the intent of the LCO that Core Alterations be included; that evolutions that can increase core reactivity be included. Recommend including Core Alterations in ITS 3.9.3 and ITS 3.9.6, similar to STS 3.9.3 and STS 3.9.6.

Response Core Alterations involve more than handling of irradiated fuel. The assumed accident initiator is the accidental drop of an irradiated fuel assembly. The proposed applicability preserves the protective requirements for this postulated accident.

Comment 3.9-04

ITS SR 3.9.3.3
STS Bases SR 3.9.3.2
STS SR 3.3.15.1, 3.3.15.2, and 3.3.15.3
DOD-3

ITS SR 3.9.3.3 was added to perform a Channel Calibration of reactor building purge exhaust radiation monitor. STS LCO 3.3.15, "RB Purge Isolation-High Radiation" was not adopted in the ITS. STS SR 3.3.15.1 and STS 3.3.15.2 require a Channel Check and a Channel Function Test respectively. ITS Section 3.9.3 did not include Surveillances to perform Channel Checks and Channel Functional Tests. STS Bases SR 3.9.3.2 discuss testing performed in STS LCO 3.3.15

indicating the necessity of testing RB Purge Isolation instrumentation. Comment: Provide information why Surveillances to perform Channel Checks and Channel Functional Tests are not included in ITS 3.9.3; why isn't STS LCO 3.3.15 being adopted?

Response Based on discussions with the reviewer (meeting on 12/19/00), no response is required.

Comment 3.9-05

ITS Bases SR 3.9.3.1
STS Bases SR 3.9.3.1
DOD-3

STS Bases SR 3.9.3.1 states the Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from

closing. Also the Surveillance will demonstrate that each valve operator has motive power. ITS Bases SR 3.9.3.1 only describes the Surveillance as demonstrating that each of the reactor building penetrations required to be in its closed position is in that position. DOD-3 did not justify the deviation from the STS Bases for SR 3.9.3.1. Comment: Provide a justification for the ITS Bases deviation from the STS Bases, in not including a check of the motive power. Recommend revising the ITS Bases for SR 3.9.3.1 to be consistent with the STS.

Response Revised 3.9DOD-3 to discuss revisions to SR 3.9.3.1 Bases and to include a discussion of fuel handling accident assumptions with respect to automatic closure of reactor building purge isolation valves.

Comment 3.9-06
ITS Bases 3.9.3 Applicable Safety Analysis
STS Bases 3.9.3 Applicable Safety Analysis

STS Bases 3.9.3 Applicable Safety Analysis states that the requirements of LCO 3.9.6, "Refueling Canal Water Level," and the minimum decay time of [100] hours prior to Core Alterations ensure that the release of fission product radioactivity subsequent to a fuel handling accident results in doses that are within the requirements in 10 CFR 100. STS Bases 3.9.3 also states the acceptance limits for offsite radiation exposure are contained in Reference 2, which is the SAR. ITS Bases 3.9.3 Applicable Safety Analysis deleted reference to the requirements of LCO 3.9.6, "Refueling Canal Water Level". ITS Bases 3.9.6 Background states the minimum water level maintains sufficient water level to retain iodine fission product activity in the water in the event of a fuel handling accident. Comment: Provide justification for not including the reference to compliance with LCO 3.9.6, "Refueling Canal Water Level" in STS Bases 3.9.3 Applicable Safety Analysis.

Response 1) Revised NUREG-1430 Bases page B 3.9-10 markup to retain reference to LCO 3.9.6.
2) Revised proposed ITS page B 3.9.3-2 to incorporate change to NUREG-1430 Bases markup.

Comment 3.9-07
ITS 3.9.5 DHR and Coolant Circulation-Low Water Level
STS 3.9.5 DHR and Coolant Circulation-Low Water Level
ITS 3.9.5 LCO Statement
DOD-12

ITS 3.9.5 does not include the STS 3.9.5 requirement that one DHR loop shall be in operation because ITS 3.9.4 is now applicable at all times in Mode 6 and it includes that requirement. The STS 3.9.4 applicability is during high water level; STS 3.9.4 and STS 3.9.5 are not simultaneously applicable. Comment: ITS 3.9.4 retains the STS 3.9.4 note that permits the DHR loop required to be in operation to be removed from operation for short periods of time (≤ 1 in 8 hours). STS 3.9.5 intentionally does not have this note during low water level. As now structured in the ITS this note now applies during low water level. This is not acceptable; the ITS needs to be revised so that the DHR loop

required to be in operation cannot be removed from operation during low water level conditions.

Response Revised the ITS to more closely resemble the NUREG 3.9.4 and 3.9.5 Applicabilities. This resulted in numerous changes to the Required Actions, Surveillances, and Bases associated with ITS 3.9.5. The Applicability and the Bases for ITS 3.9.4 were also affected. Changes were made as follows:

- 1) Revised NUREG-1430 markup pages 3.9-6, 3.9-7, 3.9-8, and 3.9-9 to incorporate this change. ITS 3.9.4 page headings, LCO Title and Applicability were revised. ITS 3.9.5 was revised to incorporate NUREG Condition B and the associated Required Actions B.1, B.2, and B.3, and NUREG SR 3.9.5.1.
 - 2) Revised the proposed ITS for ITS 3.9.4 and 3.9.5 to reflect the changes in the markup pages.
 - 3) Revised NUREG-1430 Bases markup pages B 3.9-18, B 3.9-19, B 3.9-20, and all pages of the Bases for ITS 3.9.4 to reflect the incorporation of the ITS 3.9.4 Applicability.
 - 4) Revised CTS markup pages 58 and 110aa to reflect change in Applicability and incorporation of Required Actions.
 - 5) Revised 3.9DOC-M1 to reflect the change in SR numbering in 3.9.5.
 - 6) Revised 3.9DOC-M3 and 3.9DOC-L8 to reflect the incorporation of 3.9.5 Condition B Required Actions.
 - 7) Revised 3.9DOD 07 to discuss the change in Applicability and 3.9DOD 11 to discuss changes in SR 3.9.5.1 Bases.
 - 8) Deleted 3.9DOD 12 and 3.9DOD 25, as these discussion are no longer needed with the changes in Applicability.
 - 9) Drafted 3.9DOD-32 to discuss changes in the 3.9.5 Required Action B.2 Bases.
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Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions
ITS Section 3.9: Refueling Operations

Comment ANO-241

ITS 3.9.3 incorporates generic change TSTF-92, Rev 1. This generic change has been withdrawn and incorporated into TSTF-284, Rev 3, which was approved by the NRC. Revise DOD-4 and ITS 3.9.3 to show the incorporation of TSTF-284, Rev 3. This will retain the note that the SR to verify actuation of the reactor building isolation and purge valves is not applicable when these valves are closed to comply with the LCO (3.9.3.c.1). Revise ITS 3.9.3, DOD-4 and the Bases, as appropriate.

- Response**
- 1) Revised 3.9DOD-4 to identify incorporation of TSTF-284, Rev 3.
 - 2) Revised NUREG-1430 markup page 3.9-5 to show incorporation of TSTF-284, Rev 3.
 - 3) Revised proposed ITS page 3.9.3-2 to reflect changes in NUREG markup page.
 - 4) Revised NUREG-1430 Bases markup insert B 3.9-12A to reflect incorporation of TSTF-284, Rev 3.
 - 5) Revised proposed ITS page B 3.9.3-5 to reflect the change in the NUREG Bases markup.
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Comment ANO-243

Generic change TSTF-286, Rev 2, "Define 'Operations Involving Positive Reactivity Additions'," has been approved by the NRC. Include this TSTF in the ANO-1 ITS.

- Response**
- 1) Drafted 3.9DOD-31 to identify incorporation of TSTF-286, Rev 2.
 - 2) Revised NUREG-1430 markup pages 3.9-2, 3.9-6, and 3.9-8 to incorporate TSTF-286, Rev 2.
 - 3) Revised proposed ITS pages 3.9.2-1, 3.9.4-1, and 3.9.5-2 to reflect changes to NUREG markups.
 - 4) Revised NUREG-1430 Bases pages B 3.9-3, B 3.9-6, B 3.9-14, B3.9-15, and B 3.9-19 to incorporate TSTF-286, Rev 2.
 - 5) Revised proposed ITS Bases pages B 3.9.1-2, B 3.9.2-2, B 3.9.4-2, and B 3.9.5-3 to reflect changes to NUREG Bases markups.
 - 6) Drafted 3.9DOC-L8 to discuss the incorporation of the less restrictive aspects of this generic change.
 - 7) Drafted 3.9NSHC L8 to address 3.9DOC-L8.
 - 8) Revised CTS markup pages 16, 58, and 59 to show the incorporation of the generic change. Additional insert pages for pages 58 and 59 have been added to clarify the markup.
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Comment ANO-244

Generic change TSTF-349, Rev 1, "Add Note to LCO 3.9.5 Allowing Shutdown Cooling Loops Removal From Operation," has been approved by the NRC. Include this TSTF in the ANO-1 ITS.

- Response**
- 1) Drafted 3.9DOD-29 to discuss the incorporation of TSTF-349, Rev 1.
 - 2) Revised NUREG-1430 markup page 3.9.8 to show incorporation of LCO Note per TSTF-349, Rev 1.
 - 3) Revised proposed ITS page 3.9.5-1 to show incorporation of changes on markup page.
 - 4) Revised NUREG-1430 Bases markup page B 3.9-18 to reflect incorporation of generic change.
 - 5) Revised proposed ITS Bases page B 3.9.5-2 to reflect changes on Bases page.
 - 6) Revised CTS markup page 58 to reflect incorporation of 3.9.5 LCO Note 2.
 - 7) Drafted 3.9DOC-L6 to discuss the less restrictive aspect of the incorporation of this LCO Note.
 - 8) Drafted 3.9NSHC L6 to address 3.9DOC-L6.
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Comment ANO-245

Generic change TSTF-361, Rev 2, "Allow Standby SDC/RHR/DHR loop to be inoperable to support testing," has been approved by the NRC. Include TSTF-361, Rev 2 in the ANO-1 ITS.

- Response**
- 1) Drafted 3.9DOD-30 to discuss the incorporation of TSTF-361, Rev 2.
 - 2) Revised NUREG-1430 markup page 3.9.8 to show incorporation of LCO Note per TSTF-361, Rev 2.
 - 3) Revised proposed ITS page 3.9.5-1 to show incorporation of changes on markup page.
 - 4) Revised NUREG-1430 Bases markup page B 3.9-18 to reflect incorporation of generic change.
 - 5) Revised proposed ITS Bases page B 3.9.5-2 to reflect changes on Bases page.
 - 6) Revised CTS markup page 58 to reflect incorporation of 3.9.5 LCO Note 1.
 - 7) Drafted 3.9DOC-L7 to discuss the less restrictive aspect of the incorporation of this LCO Note.
 - 8) Drafted 3.9NSHC L7 to address 3.9DOC-L7.
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Comment ANO-246

Generic change TSTF-367, Rev 0, "Insert Reference to Criterion 4," has been approved by the NRC. Include this TSTF in the ANO-1 ITS. This change is consistent with license basis changes that were made to the Bases for 3.9.4 and 3.9.5.

- Response** Revised 3.9DOD-24 to discuss incorporation of TSTF-367.
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Comment ANO-251

Generic Change TSTF-272, Rev 1, "Refueling Boron Concentration Clarification," has been approved by the NRC. Include TSTF-272, Rev 1 in the ANO-1 ITS.

- Response**
- 1) Revised NUREG-1430 markup page 3.9-1 to show incorporation of Applicability Note per TSTF-272, Rev 1.
 - 2) Drafted 3.9DOD-27 to discuss incorporation of TSTF-272, Rev 1.
 - 3) Revised proposed ITS page 3.9.1-1 to reflect change to the NUREG markup page.
 - 4) Revised NUREG-1430 Bases markup pages B 3.9-3 and B 3.9-4 to show incorporation of TSTF-272, Rev 1.
 - 5) Revised proposed ITS Bases pages B3.9.1-2 and B 3.9.1-3 to reflect the changes to the NUREG Bases markup pages.
 - 6) CTS markup page 58 revised to show incorporation of ITS 3.9.1 Applicability Note.
 - 7) Revised 3.9DOC-A9 to discuss incorporation of 3.9.1 Applicability Note.
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Comment ANO-358

The ITS 3.9.5 LCO and Applicability Bases state that a level of 23 feet above the fuel assemblies seated in the reactor vessel corresponds to approximately 390 feet above sea level. This is a level of detail not required by NUREG-1430 and should be deleted. Implementing procedures adequately define the level requirements.

- Response**
- 1) Revised NUREG-1430 Bases markup page 3.9-18 to delete "(corresponds to approximately 390 feet above sea level)" from LCO and Applicability Bases.
 - 2) Revised proposed ITS Bases page B 3.9.5-1 and B 3.9.5-2 to reflect the change in NUREG-1430 markup.
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Arkansas Nuclear One - Unit 1
Improved TS Review NRC Comment Resolutions
ITS Section 4.0: Design Features

Comment 4.0-01

ITS 4.3.1.1.b
STS 4.3.1.1.b
CTS 5.4.2.1
DOD 8

The ITS omits a specific reference to the FSAR's description of the uncertainties in calculating keff for the spent fuel storage pool when the pool is flooded with unborated water. DOD 8 claims the CTS does not reference the FSAR. To the contrary, FSAR Section 9.6 is given as an overall reference to CTS Section 5.4 (but has been removed per DOC A1). Comment: Revise ITS 4.3.1.1.b to be consistent with the STS and CTS to include the FSAR location of the description of the uncertainties. Similar phrases regarding uncertainties should also be included in ITS 4.3.1.2.b and c for consistency with the STS.

- Response**
- 1) Revised CTS markup page 116 to insert correct SAR references to 5.4.1.1 and 5.4.2.1.
 - 2) Deleted 4.0 DOD-8 since SAR references have been retained in ITS.
 - 3) Revised NUREG-1430 markup page 4.0-1 to insert correct SAR reference to 4.3.1.1.b.
 - 4) Revised NUREG-1430 markup page 4.0-2 to insert correct SAR reference to 4.3.1.2.b and c.
 - 5) Revised proposed ITS page 4.0-3 to reflect changes in NUREG-1430 markup.
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Comment 4.0-02

DOD 6
STS 4.3.2 and 4.3.3

The ITS omits the STS design feature specifications regarding the spent fuel storage pool drainage design limitation and fuel storage capacity limitation. These specifications are required to be included in TS by 10 CFR 50.36(c)(4) since they pertain to features of the facility which, if altered or modified, would have a significant effect on safety, and are not covered by Safety Limits, Limiting Conditions for Operation, or Surveillance Requirements. Comment: Although Unit 1 CTS do not include design feature specifications corresponding to drainage and capacity, these specifications ought to be included in the ITS as required by regulation. Revise the ITS 4.0 to include appropriately-worded specifications for drainage and capacity.

- Response**
- 1) Drafted 4.0 CTS DOC-M2 to identify the addition of more SFP design features to the CTS.
 - 2) Revised CTS markup page 116 to add NUREGs 4.3.2 and 4.3.3.
 - 3) Drafted 4.0 DOD-9 to state that storage spaces are not designated for failed fuel.

- 4) Deleted 4.0 DOD-6 since NUREG 4.3.2 and 4.3.3 have been retained in ITS.
 - 7) Revised NUREG-1430 markup page 4.0-3 to retain 4.3.2 / 4.3.3 and insert correct values.
 - 8) Revised NUREG-1430 markup page 4.0-3 to delete reference to failed fuel containers.
 - 9) Revised proposed ITS page 4.0-4 to reflect changes in NUREG-1430 markup.
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**Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions
ITS Section 4.0: Design Features**

Comment ANO-356

The resolution of NRC Comment 3.7-14 will result in the retention of NUREG-1430 LCO 3.7.14. This will be retained in the ITS as LCO 3.7.13, resulting in the renumbering of subsequent LCO's. Currently, ITS 4.3.1.1.d and 4.3.1.1.e refer to ITS Figure 3.7.14-1. With the change to Section 3.7, this reference will be change to ITS Figure 3.7.15-1. Revise ITS 4.3.1.1.d and 4.3.1.1.e accordingly.

Response 1) Revised NUREG-1430 markup page 4.0-2 to incorporate the change in reference.
2) Revised proposed ITS page 4.0-3 to reflect the change in markup.

**Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions
ITS Section 5.0: Administrative Controls**

Comment ANO-335

LAR dated 11/23/99 was approved as Amendment 210. Revise DOC A10 and CTS markup pages as necessary.

- Response**
- 1) Replaced CTS markup pg. 66c with Amendment 210 copy and deleted reference to 5.0DOC-A10.
 - 2) Replaced CTS markup pg. 66d with Amendment 210 copy and deleted reference to 5.0DOC-A10.
 - 3) Replaced CTS markup pg. 66g with Amendment 210 copy and deleted reference to 5.0DOC-A10.
 - 4) Replaced CTS markup pg. 66h with Amendment 210 copy.
 - 5) Deleted 5.0DOC-A10.
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Comment ANO-339

Revise CTS markup page 66w for new Amendment 204 as necessary.

- Response** Replaced CTS markup page 66w with Amendment 204 copy of page.
-

Comment ANO-340

LAR dated 07/14/99 was approved as Amendment 208. Revise DOC A15 and CTS markup pages as necessary.

- Response**
- 1) Replaced CTS markup page 126 with Amendment 208 copy of page.
 - 2) Deleted 5.0DOC-A15.
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Comment ANO-341

Revise DOC A11 to delete unnecessary explanation of removing the "equal to" sign from the acceptance criteria.

- Response** Revised CTS 5.0DOC-A11, deleting sentence 2.
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Comment ANO-342

Typographical error in LA3: CTS Location reference to 3.15.1 should reference 3.15.1.e.

Response Revised 5.0DOC-LA3 to reference 3.15.1.e instead of 3.15.1.

Comment ANO-343

Reference to DOC L8 for 4.6.1.4 is incorrect. Should reference DOC L6.

Response Revised CTS markup page 100, specification 4.6.1.4 to reference 5.0DOC-L6.

Comment ANO-345

Incorporate pending TS Amendment associated with the SG Tube reroll process.

Response

- 1) Replaced existing pages 110m and 110n with proposed CTS pages.
- 2) Created 5.0DOC-A18 to discuss expected amendment approval.
- 3) Revised SG Tube NUREG-1430 Insert 5.0-11A page 4 of 7 to incorporate amendment.
- 4) Revised ITS pages 5.0-15 and 5.0-16 to incorporate proposed amendment.

Comment ANO-346

Relocate limitations placed on the Main Feedwater Piping Penetration annulus to the TRM.

Response

- 1) Revised CTS page 73a Table 4.1-2 Item 12 to reference DOC LA6.
- 2) Revised 5.0DOC-LA6 to include relocation of MFW Annulus requirements to TRM.
- 3) Revised 5.0DOC-L5 to show as not used.

Comment ANO-347

Deleting references to RG 1.52 C.5.a, C.5.c, and C.5.d may have made the ITS more restrictive than CTS. In addition, CTS 4.10.2.b.2 and 4.10.2.c reference RG 1.52 C.6.b, which provides inconsistency with the above reference deletions. Evaluate desire to remove references.

Response

- 1) Updated CTS Page 107 and 108 to show deletion of reference to C.6.b of RG 1.52.
- 2) Modified 5.0DOC-A8 to allow it to be referenced for deletion of C.6.b above.
- 3) Created new 5.0DOC-M10 to discuss deleting C.5.a, C.5.c, and C.5.d references.

Comment ANO-348

Proposed ITS does not include the design system flow rate values for the PRVS or the FHAVS. NUREG 5.5.11 includes these flowrates. Evaluate need to include flowrates in the ITS.

- Response**
- 1) Created new 5.0DOC-M11 to discuss additional operational restrictions that result by incorporating specific flow values.
 - 2) Added the system design flow rate(s) to CTS 3.13.1.a & d on page 66c.
 - 3) Added the system design flow rate(s) to CTS 3.15.1.a & d on page 66g.
 - 4) Added the system design flow rate(s) to CTS 4.11.1 on page 109.
 - 5) Added the system design flow rate(s) to CTS 4.17.1 on page 110h.
 - 6) Revised NUREG 1430 Insert 5.0-12A on page 5.0-12 to incorporate flow rates.
 - 7) Revised ITS 5.5.11 page 5.0-20 & 21 to incorporate flow rates.
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Comment ANO-349

TSTF-308, Rev 1 has been approved by the NRC. This change revises 5.5.4.e to describe the intent of the dose projections. The ITS submittal incorporated TSTF-308, Rev 0. Evaluate TSTF-308, Rev 1 for inclusion in the ITS.

- Response**
- 1) Revised NUREG-1430 page Insert 5.0-9A to reflect the incorporation of TSTF-308, Rev 1 in 5.5.4.e.
 - 2) Revised 5.0DOD-41 to reflect the incorporation of TSTF-308, Rev 1.
 - 3) Revised NUREG-1430 markup page 5.0-9 to reflect TSTF-308, Rev 1.
 - 4) Revised proposed ITS page 5.0-8 to reflect the changes in the NUREG markup.
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Comment ANO-350

TSTF-348, Rev 0 has been approved by the NRC. This change deletes information concerning environmental TLDs from the Annual Radiological Environmental Operating Report. Evaluate TSTF-348, Rev 0 for inclusion in the ITS.

- Response**
- No change to the submittal is required. TSTF-348, Rev 0 is not incorporated due to the retention of the current license basis which did not include the information deleted by the generic change.
-

Comment ANO-351

TSTF-362, Rev 0 has been approved by the NRC. This change revises the Ventilation Filter Testing Program consistent with GL 99-06. Evaluate TSTF-362, Rev 0 for inclusion in the ITS.

- Response**
- TSTF-362, Rev 0 is not incorporated in the ANO-1 ITS, due to the retention of current license basis. TSTF-362 requires that if the actual filter face velocity is greater than 110%

of 40 fpm, then the test face velocity should be specified in the TS. The actual face velocities of the PRVS and FHAVS are 41.25 and 42.55 fpm, respectively. A Technical Evaluation Report associated with the Safety Evaluation for Amendment 210, December 28, 2000, concluded that the face velocities were not required to be incorporated in the TS because testing in accordance with ASTM D3803-1989 ensures that the testing is consistent with the operation of the ventilation system during accident conditions. Therefore, no additional changes are required to the submittal.

Comment ANO-352

TSTF-363, Rev 0 has been approved by the NRC. This change revises the Core Operating Limits Report description so that the Core Operating Limits Report contains the complete identification for each TS referenced topical report used to prepare the Core Operating Limits Report. Evaluate TSTF-363, Rev 0 for inclusion in the ITS.

Response TSTF-363, Rev 0 is not incorporated in the ITS due to the retention of the ANO-1 current license basis for the Core Operating Limits Report description. No additional change to the submittal is required.

Comment ANO-353

TSTF-364, Rev 0 has been approved by the NRC. This change revises the TS Bases Control Program for consistency with the new 10CFR50.59 requirements. Evaluate TSTF-364, Rev 0 for inclusion in the ITS.

Response

- 1) Revised NUREG-1430 markup page 5.0-16 to reflect incorporation of TSTF-364 in 5.5.14.
- 2) Revised proposed ITS page 5.0-23 to reflect change in NUREG markup.
- 3) Drafted 5.0DOD-43 to discuss incorporation of TSTF-364.

Comment ANO-354

Incorporate pending TS Amendment associated with the SG Tube ODIGA.

Response

- 1) Replaced existing pages 110j1 and 110m with proposed CTS pages.
- 2) Created 5.0DOC-A19 to discuss LAR.
- 3) Revised SG Tube NUREG-1430 Insert 5.0-11A pages 2 of 7 and 4 of 7 to incorporate amendment.
- 4) Revised ITS pages 5.0-12 and 5.0-16 to incorporate proposed amendment.

Comment ANO-357

ITS 5.5.11.c.1 and 5.5.11.c.2 include a requirement that the charcoal adsorber for the PRVS and FHAVS must show a methyl isodid penetration of <5% when tested at the

system design flow rate $\pm 20\%$. The requirement for testing at the system design flow rate was deleted from the ANO-1 CTS by Amendment 210, dated December 28, 2000. Retaining this information in the ITS would result in a conflict with ASTM D3803-1989. The ASTM provides test criteria that specifies the test standard flow rate. The system design flow rate requirement should be deleted from ITS 5.5.11.c.1 and 5.5.11.c.2 for consistency with the current license basis, and for consistency with ASTM D3803-1989.

Response This information was included in the ITS since, at the time, the LAR associated with ANO's GL 99-06 response retained the system design flow rate information in the CTS. Subsequent discussions with the NRC Staff resulted in the removal of the system design flow rate requirements from CTS by Amendment 210. This change is required to prevent potential conflict between the Operating License and the test standard which the same Operating License specifies.

- 1) Revised NUREG-1430 markup page Insert 5.0-12A to delete "when tested at the system design flowrate $\pm 20\%$ from 5.5.11.c.1 and 5.5.11.c.2.
 - 2) Revised proposed ITS page 5.0-21 to reflect the change in the NUREG markup.
-