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May 3, 2001

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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 3.3, "Instrumentation," 3.7,  
"Plant Systems," and 3.8, "Electrical Power Systems" (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 January 23, 2001 and January 24, 2001, members of the ANO staff and the NRC Technical Specifications Branch discussed the NRC comments on 3.3, "Instrumentation," 3.7, "Plant Systems," and 3.8, "Electrical Power Systems" and the ANO resolutions of these comments.

This submittal contains the Entergy Operations responses to the RAIs discussed at the meetings 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 3.3,

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 3.7, and

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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 3.8.

As a result of NRC comments on our initial submittal, draft shutdown electrical specifications were provided to and discussed with the Staff. Comments received during discussions of the draft shutdown electrical specifications have also been incorporated, as appropriate.

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

Executed on May 3, 2001.

Very truly yours,

A handwritten signature in black ink, appearing to read 'CGA/cws', written in a cursive style.

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:

Designator      Category

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.

- 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) Amendment 206, approved April 28, 2000, related to Startup Transformer No. 2 Allowed Outage Time for Preventative Maintenance, and
- 2) Amendment 211, approved March 12, 2001, related to 4160 V Bus Loss-of-Voltage Settings and 480 Volt Degraded Voltage Settings.

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 August 6, 1998, related to the sodium hydroxide tank level was approved as Amendment 205, and
- 2) LAR dated November 23, 1999, related to laboratory testing of activated charcoal filters, GL 99-02, was approved as Amendment 210.

**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
3.8	TSTF-36, Rev. 4	Addition of LCO 3.0.3 N/A to shutdown electrical power specifications	3.8DOD-55
3.8	TSTF-204, Rev. 3	Revise DC Sources – Shutdown to Address Specific Subsystem Requirements	3.8DOD-56
3.3	TSTF-264, Rev. 0	3.3.9 and 3.3.10 – Delete flux monitors specific overlap requirements	3.3ADOD-15
3.8	TSTF-283, Rev. 3	Modify Section 3.8 Mode restriction Notes	3.8DOD-64

Section	TSTF Number	Title	Discussion
3.7	TSTF-284, Rev. 3	Add "Met vs. Perform" to Specification 1.4, Frequency	3.7DOD-14
3.3, 3.8	TSTF-286, Rev. 2	Define "Operations Involving Positive Reactivity Additions"	3.3ADOD-34, 3.8DOD-62
3.7	TSTF-287, Rev. 5	Ventilation System Envelope Allowed Outage Time	3.7DOD-54
3.7	TSTF-340, Rev. 3	Allow 7 day Completion Time for a turbine-driven AFW pump inoperable	3.7DOD-55
3.3	TSTF-342, Rev. 1	Revise SR 3.3.1.5, Calibration, and associated requirements for power range channels	3.3ADOD-30
3.7	TSTF-352, Rev. 1	Provide Consistent Completion Time to Reach MODE 4	3.7DOD-56

**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 3.3 received as a result of NRC review and the ANO resolutions of these comments. Attachment 3 provides a list of changes to ITS Section 3.3 as a result of the incorporation of comments received from the ANO staff. Attachment 4 provides a listing of all comments on ITS Section 3.7 received as a result of NRC review and the ANO resolutions of these comments. Attachment 5 provides a list of changes to ITS Section 3.7 as a result of the incorporation of comments received from the ANO staff. Attachment 6 provides a listing of all comments on ITS Section 3.8 received as a result of NRC review and the ANO resolutions of these comments. Attachment 7 provides a list of changes to ITS Section 3.8 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 3.3: Instrumentation**

**Comment 3.3.1-01**

Section 3.3A DOC A1 and DOD 21  
CTS 2.3.1, Table 2.3-1  
ITS 3.3.1, Table 3.3.1-1 Allowable Values

CTS 2.3.1 provides trip settings for RPS functions. ITS 3.3.1 describes the limiting system safety settings in terms of Allowable Values and uses the same numeric values as CTS 2.3.1. The markup of the STS trip setpoints / allowable values discussion in the background section of the Bases does not reference a formal methodology for establishing protection system allowable values.

Comment: The STS assumes the existence of an acceptable formal setpoint methodology. The allowable values specified in the ITS should be based upon the application of this methodology to the specific protection system instrument channels. Provide allowable values based upon the application of a formal setpoint analysis methodology.

**Response** Added paragraph to Section 3.3A DOD 21 to provide further discussion of allowable values and instrument uncertainties.

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**Comment 3.3.1-02**

Section 3.3A DOC L3  
CTS 3.5.1.9, Items 1 and 2  
ITS 3.3.1, Table 3.3.1-1, Functions 9 and 10, Applicability  
and Required Actions F.1 and G.1

CTS 3.5.1.9 requires that the Main Feedwater Trip input to the RPS be Operable when greater than 5% reactor power but allows that it be bypassed up to 10% reactor power. Similarly, the CTS require that the Main Turbine Trip input to the RPS be Operable when greater than 5% reactor power, but allow it to be bypassed up to 45% reactor power. The ITS requires Operability of these functions at or above 10% and 45% Rated Thermal Power, respectively, and does not address the provisions for bypass. DOC L3 justifies this change on the basis that requiring Operability at power levels at which they were allowed to be bypassed is inconsistent with their safety function.

Comment: Requiring Operability of a function under conditions in which it is allowed to be bypassed is not necessarily inconsistent with the function's safety function. Requiring Operability, but allowing bypass requires that the function be available to perform its safety function in the event that the operational bypass is automatically removed. DOC L3 has not considered that this may have been the basis for the original requirement. Under the proposed ITS applicability, the functions will not be required to be Operable in the event that bypasses are automatically removed. Retain the CTS requirements in the ITS. This will require changes both to the applicability, the associated Required Actions,



discussion of the allowed bypass conditions in Table 3.3.1-1, and addition of the automatic bypass removal functions to Table 3.3.1-1.

- Response**
- 1) Added further discussion to Section 3.3A DOC L3 regarding operability of the automatic bypass removal feature.
  - 2) Added discussion to Section 3.3A NUREG 3.3.1 Bases Applicable Safety Analyses, LCO, and Applicability section Items 9 and 10, including Bases Insert B 3.3-19B and new Bases Insert B 3.3-18A, regarding function of the automatic bypass removal feature and its effect on channel operability.
  - 3) Added statement to Section 3.3A NUREG 3.3.1 Bases SR 3.3.1.5 Insert B 3.3-28A that the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.
  - 4) Revised Section 3.3A ITS Bases 3.3.1 Applicable Safety Analyses, LCO, and Applicability section Items 9 and 10 on pages B 3.3.1-13 & 14 to incorporate aforementioned discussions.
  - 5) Revised Section 3.3A ITS Bases SR 3.3.1.5 on page B 3.3.1-20 to ensure the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.

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**Comment 3.3.1-03**

Section 3.3A DOC L5

CTS 3.5.1, Table 3.5.1-1, Function 1, Minimum Operable Channels

ITS 3.3.1, Condition B

CTS Table 3.5.1-1 requires initiating shutdown if less than three power range neutron channels are Operable or the minimum degree of redundancy is less than 1 for more than four hours. The proposed ITS applies Condition B to the power range neutron channels. This condition allows indefinite operation with only two power range neutron trip channels Operable. This is consistent with the STS.

Comment: DOC L5 justifies the change based upon the fact that the proposed ITS requirement for the power range function is consistent with the requirements for other channels. The reasons why the power range requirement was different in the first place are not addressed in the DOC. Add a note to Condition B indicating that it is not applicable to Functions 1, 7, and 8 of Table 3.3.1-1, or modify the DOC to address the considerations that lead to the original requirement that operation with the power range function in a one-out-of-two condition be minimized and why the proposed change is acceptable in this context.

- Response**
- 1) Relocated and revised Section 3.3A CTS DOC L5 to new DOC A17.
  - 2) Changed DOC reference to Section 3.3A CTS Table 3.5.1-1 Item 2.
  - 3) Deleted Section 3.3A NSHC 3.3A L5.
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**Comment 3.3.1-04**

Section 3.3A DOC M4  
CTS 4.1, Table 4.1-1, Function 3, Power Range Amplifier  
ITS 3.3.1, SR 3.3.1.2

CTS Table 4.1-1 requires calibration of the power range amplifiers twice weekly under steady-state operating conditions and daily under non-steady state conditions. ITS SR 3.3.1.2 adopts the STS requirement to verify calorimetric heat balance is  $\leq 2\%$  Rated Thermal Power (RTP) greater than the power range channel output. It requires adjusting the power range channel output if the calorimetric heat balance exceeds power range channel output by  $\geq 2\%$  RTP.

Comment: This is a less restrictive change because the CTS requires adjustment of the power range channel output regardless of the variation from the calorimetric heat balance, while the ITS requires adjustment only if the difference is 2% RTP or more. DOC M4 does not provide a justification for this change or the use of the 2% RTP criterion for ANO-1. Justification is, however, provided in the ITS Bases. Identify the change to the calibration requirement as a less restrictive change and incorporate the discussion from the ITS Bases for SR 3.3.1.2 into a new L-type DOC. Note that the requirements for calibration of the power range channels should be consistent with the assumptions of the setpoint analysis.

**Response** 1) Relocated and revised portions of Section 3.3A CTS DOC M4 to new DOC A18.  
2) Revised DOC reference to Section 3.3A CTS Table 4.1-1 Item 3 on page 69.

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**Comment 3.3.1-05**

Section 3.3A DOC L9  
CTS 4.1, Table 4.1-1, Function 4, Power Range Channel  
ITS 3.3.1, SR 3.3.1.3

CTS Table 4.1-1 requires checking power range channels using incore instrumentation. ITS SR 3.3.1.3 adopts the STS requirement to compare the axial power imbalance measurement of the out-of-core measurements (power range channels) to the in-core measurements.

Comment: DOC L9 does not indicate that the SR 3.3.1.3 wording describes the same surveillance test required by the CTS, nor does it justify a change to the surveillance testing conducted. Modify DOC L9 to discuss the relationship between the ITS required test and the CTS required test and provide a justification for any differences.

**Response** Revised Section 3.3A CTS DOC L9 to discuss SR 3.3.1.3 acceptably meeting the requirements of the CTS and incorporation of TSTF-342, Rev. 1.

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**Comment 3.3.1-06**

Section 3.3A (no DOC) DOD 30

CTS 4.1, Table 4.1-1, Function 4, Power Range Channel monthly calibration and Notes (1) and (2)

ITS 3.3.1, SR 3.3.1.5, Table 3.3.1-1 Function 1.a, Nuclear Overpower - High Setpoint

ITS 3.3.1, SR 3.3.1.5, Table 3.3.1-1 Function 1.b, Nuclear Overpower - Low Setpoint

(1) The STS SR 3.3.1.5 requirement to calibrate Functions 1.a and 1.b should be adopted - the note about excluding the neutron detectors from the CHANNEL CALIBRATION is appropriate. The CTS monthly 'calibration' of each power range channel "using core instrumentation" is covered by SR 3.3.1.5, as explained in the STS Bases. Changing to the proposed SR 3.3.1.5 would be a generic change. The proposed wording of ITS SR 3.3.1.5 is unnecessary to meet the ITS's intent of avoiding actually tripping the channel as part of the monthly incore-comparison excore Channel Calibration. That tripping the channel for this monthly SR would duplicate the monthly Channel Functional Test's channel trip is insufficient reason to avoid adopting the STS wording.

(2) CTS Table 4.1-1 requires calibrating the power range channels monthly "using core instrumentation." Neither the CTS, nor the STS limit the applicability of this requirement based upon reactor power. In the STS, this surveillance is required in Mode 1 and in Mode 2 when not in shutdown bypass operation (STS Table 3.3.1-1, Function 1.a).

ITS SR 3.3.1.5 includes a note that this surveillance is not required to be performed until 24 hours after thermal power exceeds 20% RTP. Indeed, with the addition of this note, the ITS requires no check of power range channel output against an independent measurement of reactor power during low power or startup operation.

Comment: No DOC has been provided for adding this note to the ITS. DOD 30 justifies the 20% RTP value used in the note "since at low power levels calorimetric data are inaccurate and the incore nuclear instruments are not capable of providing reliable accurate indication of axial power imbalance." This is similar to the wording of DOCs L12 and L13 which justified the plant specific values used in the notes of SR 3.3.1.2 and SR 3.3.1.3. What has not been justified in DOC L12, DOC 13, or DOD 30 is the basis for not requiring any overall calibration of the power range channels below 20% RTP. While SR 3.3.1.6 requires calibration of the power range electronics each cycle, it does not establish the relationship between neutron detector readings and reactor power. Without some form of channel calibration during startup (especially following core modifications) the relationship between the point at which the power range channels will trip and the analytical limit assumed in the safety analysis is unknown.

Provide a surveillance requirement that addresses the need to calibrate the power range channels against an independent measurement of reactor power during low power operations. This surveillance requirement should also be applied to Function 1.b in Table 3.3.1-1.

Along with the responses to the above comments, list and describe the scope of the surveillances currently performed on the power range excore instrumentation channels, citing the specific CTS requirement, and the corresponding proposed ITS requirement,

including any additional surveillance requirements. Also describe any checks on these channels not included in TS.

- Response**
- 1) Updated Section 3.3A DOC L12 and L13 to include discussion for delaying SR performance until > 20% RTP.
  - 2) Changed reference on page 69 of Section 3.3A CTS to 3.3.1.3 vs. 3.3.1.5.
  - 3) Incorporated TSTF 342, Rev. 1 into Section 3.3A NUREG 1430 SR 3.3.1.2, SR 3.3.1.3, SR 3.3.1.5, and SR 3.3.1.6.
  - 4) Deleted SR 3.3.1.6 from Section 3.3A NUREG 1430 Table 3.3.1-1 Item 1a and 1b since TSTF 342, Rev. 1 changes this SR to 3.3.1.5.
  - 5) Revised Section 3.3A NUREG Bases SR 3.3.1.2, SR 3.3.1.3, SR 3.3.1.5, and SR 3.3.1.6 to incorporate TSTF 342, Rev. 1.
  - 6) Deleted Section 3.3A NUREG Inserts B3.3-28B & C due to incorporation of TSTF-342, Rev.
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**Comment 3.3.1-07**

Section 3.3A (no DOC and no DOD)  
CTS 4.1, Table 4.1-1, Function 4, Power Range Channel  
ITS 3.3.1, SR 3.3.1.3 and SR 3.3.1.5

CTS Table 4.1-1 requires both checking and calibrating the power range channels using incore instrumentation on a frequency of once per month. The corresponding STS requirements are based upon a monthly check (SR 3.3.1.3) and a quarterly calibration (SR 3.3.1.5). The ITS retains the requirement for both a monthly check and a monthly calibration as two separate surveillance requirements.

Comment: The check required by ITS SR 3.3.1.3 is embedded in the calibration required by ITS SR 3.3.1.5. Therefore, SR 3.3.1.3 is not required when SR 3.3.1.5 is required on the same or a shorter frequency than SR 3.3.1.3. Explain why it would not be appropriate to delete SR 3.3.1.3 and apply SR 3.3.1.5 to function 1.a and 1.b of Table 3.3.1-1. Incorporate the justification for this change into DOC A11.

- Response** Responses to RAIs 3.3.1-05 and 3.3.1-06 incorporate the concerns of this comment.
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**Comment 3.3.5-01**

Section 3.3B DOC A1  
CTS 3.5.3, Setpoint column  
ITS 3.3.5, Table 3.3.5-1 Allowable Values

CTS 3.3.5 provides trip settings for Engineered Safeguards Actuation System (ESFAS) functions. ITS 3.3.5 describes the ESFAS trip settings in terms of Allowable Values and uses the same numeric values as CTS 3.5.3. The markup of the STS trip setpoints / allowable values discussion in the background section of the Bases does not reference a formal methodology for establishing protection system allowable values.

Comment: The STS assumes the existence of an acceptable formal setpoint methodology. The allowable values specified in the ITS should be based upon the application of this methodology to the specific protection system instrument channels. Provide allowable values based upon the application of a formal setpoint analysis methodology.

**Response** Added paragraph to Section 3.3B DOD 10 to provide further discussion of allowable values and instrument uncertainties.

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**Comment 3.3.5-02**

Section 3.3B DOCs L7 and L1

CTS 3.5.1, 3.5.3, Footnote \*\*, 4.1, Table 4.1-1 - Functions 15.a and 17.a, Note 1

ITS 3.3.5, Bases inserts B3.3-48A, B3.3-53A

CTS 3.5.1 requires Operability of ESFAS functions without limitation by plant mode or condition. CTS 3.5.3 footnote \*\* indicates that the Low Reactor Coolant System Pressure function may be bypassed below 1750 psig, and requires the capability to automatically reinstate the function above 1750 psig. CTS 4.1, Table 4.1-1, requires that the bypass function be included in the monthly test of the Low RCS pressure function.

The ESFAS low RCS pressure bypass function is not explicitly treated in the STS. Instead, it is treated as a part of the RCS Low Pressure function. The LCO section of the STS Bases makes it clear, however, that a failure such that the trip channel cannot be bypassed does not render the channel inoperable. Insert B3.3-53 A in the STS Bases markup goes on to state the bypass function is not safety related.

DOC L7 indicates that the requirements on the shutdown bypass function are omitted in ITS 3.3.5 because the bypass provides no safety function. This change is manifested by modification to the ITS Bases to indicate that bypass Operability is not required for Operability of the Low RCS Pressure function.

Comment: The ITS Bases and DOC statements that the bypass has no safety function are incorrect. The safety function involved is to automatically remove the bypass when power is increased above the bypass setpoint. The STS Bases are correct in stating that failures which prevent bypassing the RCS Low Pressure Function do not make that function inoperable. Failures, however, which prevent automatic removal of the bypass as pressure increases above 1750 psig do cause inoperability. Include the shutdown bypass function in ITS 3.3.5 and in the scope of SR 3.3.5.2. This might be most readily done by revising the ITS Bases to clarify that the bypass removal function is safety related and is required for Operability of the RCS low pressure function.

**Response**

- 1) Added further discussion to Section 3.3B DOC L1 regarding operability of the automatic bypass removal feature.
- 2) Added discussion to Section 3.3B NUREG 3.3.5 Bases Background Insert B 3.3-48A regarding function of the automatic bypass removal feature and its effect on channel operability.
- 3) Added statement to Section 3.3B NUREG 3.3.5 Bases SR 3.3.5.2 that the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.

- 4) Revised Section 3.3B ITS Bases 3.3.5 Background on page B 3.3.5-3 to incorporate aforementioned discussions.
- 5) Revised Section 3.3B ITS Bases SR 3.3.5.2 to ensure the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.

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**Comment 3.3.5-03**

Section 3.3B DOC LA2  
CTS 4.1, Table 4.1-1 - Function 20, Note 1  
ITS 3.3.7, SR 3.3.7.1

CTS 4.1, Table 4.1-1 Function 20, Note 1 requires that the monthly test include the reactor building spray pump, spray valves and the chemical additive valve logic channels. This requirement is not explicitly included in the ITS. DOC LA2 justifies this based upon the relocation of this information to the Bases for ITS SR 3.3.7.1.

Comment: The Bases discussion of ITS SR 3.3.7.1 does not identify testing of the spray pump, spray valves, or chemical additive valve logic as part of the SR. While Insert B3.3-69 in the markup of the STS Bases makes it clear that the logic for the spray pump, spray valves, chemical additive valves are part of the function, it would not be clear from this that testing of the pumps and valves are necessary as seems to be required by the CTS. Revise the ITS Bases to be consistent with the CTS requirement and DOC LA2.

- Response**
- 1) Created new Section 3.3B NUREG 1430 DOD 17 to discuss inclusion of CTS Table 4.1-1 Function 20 information in NUREG 1430 Bases SR 3.3.7.1.
  - 2) Added CTS Table 4.1-1 Function 20 information to Section 3.3B NUREG Bases SR 3.3.7.1.
  - 3) Added CTS Table 4.1-1 Function 20 information to Section 3.3B ITS SR 3.3.7.1 on page B 3.3.7-4.

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**Comment 3.3.8-01**

Section 3.3D DOD 5  
CTS 3.5.1.8  
ITS SR 3.3.8.2

CTS 3.5.1.8 provides trip setpoints for degraded voltage functions. The ITS carries these requirements directly over from the CTS. The ITS expresses these settings in terms of allowable values. All other safety settings in the ITS are expressed as allowable values.

Comment: Safety settings in the ITS should be consistently expressed as allowable values to avoid confusion. Provide allowable values based upon the application of a formal setpoint analysis methodology.

- Response** Changes incorporated by ANO-359 which implemented TS Amendment 211 and addresses the reviewers comment.
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**Comment 3.3.8-02**

Section 3.3D DOC LA1

CTS 3.5.1, Table 3.5.1-1 Function 8.b, 460V Emergency Bus UV & footnote \*

ITS LCO 3.3.8

CTS 3.5.1 Table 3.5.1-1, Function 8.b requires one Operable 480 V undervoltage function per bus. A footnote indicates that two undervoltage relays are used per bus in a two-out-of-two logic configuration, but Column 2 of the table indicates that only one channel is required for trip. ITS LCO 3.3.8 requires one Operable channel of the degraded voltage function per diesel generator. Neither the ITS Bases nor the DOC explicitly correlate the 480 V undervoltage function in the CTS to the degraded voltage function identified in ITS 3.3.8. This relationship may, however, be inferred from the discussion in the Bases and the setpoints discussed in the Bases correspond to the degraded voltage setpoints in SR 3.3.8.2. The Bases also does not discuss the definition of channel so the conventional definition of one relay per channel is assumed. Furthermore, the Bases indicates there is a pair of undervoltage relays on each safety related 480 V bus.

Comment: (1) Requiring the Operability of only one degraded voltage relay in a two-out-of-two logic arrangement does not ensure Operability of the degraded voltage function. Consequently, both the ITS and CTS appear to be incorrect. (2) A diesel generator is typically connected to more than one safety related bus. Therefore, the ITS requirement of one Operable channel per diesel generator is not equivalent to the CTS requirement of one Operable channel per bus.

The ITS should require two Operable degraded voltage channels per bus per diesel generator. The Bases should also be upgraded so that the functions required by ITS 3.3.8 can be better correlated to the Bases discussion.

- Response**
- 1) Added new Section 3.3D CTS DOC M12 to discuss requiring 2 relays per 480 V bus.
  - 2) Removed Item 8b from Section 3.3D CTS DOC LA1; moved discussion to DOC M12.
  - 3) Changed reference on page 45d Section 3.3D CTS Table 3.5.1-1 Item 8b to DOC M12.
  - 4) Changed wording of Section 3.3D NUREG 1430 DOD 3 to require 2 relays per 480 V Bus.
  - 5) Changed Section 3.3D NUREG 3.3.8 and Action A/A.1 on page 3.3-20 wording to clarify that "relays" are what was implied by "channels."
  - 6) Changed Section 3.3D NUREG 1430 SR 3.3.8.2 on page 3.3-21 wording to clarify that "relays" are what was implied by "channels."
  - 7) Changed Section 3.3D NUREG Bases Insert 3.3-74A wording to clarify that "relays" are what was implied by "channels."
  - 8) Changed Section 3.3D NUREG Bases Actions 3.3.8 on page B 3.3-76 wording to clarify that "relays" are what was implied by "channels."
  - 9) Changed Section 3.3D ITS 3.3.8 LCO, Action A/A.1, and SR 3.3.8.2 on page 3.3.8-1 & 2 to incorporate wording change and require 2 480 V relays per bus.
  - 10) Changed Section 3.3D ITS 3.3.8 Bases LCO, Actions, and Action A.1 on page B 3.3.8-2 through 4 to incorporate wording change and require 2 480 V relays per bus.
-

**Comment 3.3.9-01**

Section 3.3A DOD 9  
CTS 3.5.1, Table 3.5.1-1, Function 4, Source Range Channel  
ITS 3.3.9, LCO

CTS Table 3.5.1-1 indicates the total number of source range channels is 2 with the minimum Operable channels of 1. The STS requires 2 Operable source range channels.

ANO-1 ITS LCO 3.3.9 requires one Operable channel, consistent with the minimum Operable channels of the CTS.

Comment: The ITS requirement of one Operable source range channel is not consistent with the STS format which generally requires that the total number of channels in a given function be required Operable. Specification of a single required channel in ITS LCO 3.3.9 is also inconsistent with the application of the STS philosophy to the other protection system LCOs which require Operability of all channels in a function. Revise ITS LCO 3.3.9 to require Operability of both source range channels. This will also require modification of the conditions and required actions for ITS 3.3.9.

**Response** Modified Section 3.3A NUREG 1430 DOD 9 to discuss other indications that are available to the operator during the approach to criticality.

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**Comment 3.3.9-02**

Section 3.3A DOC L10  
CTS 3.5.1, Table 3.5.1-1, Function 4, Source Range Channel, Note 2  
ITS 3.3.9, Applicability

CTS Table 3.5.1-1 does not explicitly address the modes in which the source range channels are required to be Operable, but it does allow that hot shutdown is not required if both source range channels fail when at least 2 power range channels are indicating greater than 10% power. The ANO-1 ITS has adopted the STS requirement that source range Operability be required in Mode 2 and below. Thus the ITS does not require source range Operability above 5% RTP, based upon the definition of Mode 2.

The ITS Bases indicate that the interlock function provided by the source range detectors may function up to 10% RTP as indicated on the power range channels. Comment: DOC L10 does not provide a technical justification for this change. Neither the DOC, nor the ITS Bases discuss the rationale for allowing the source range channels to be inoperable between 5% RTP and 10% RTP when the source range interlock function is not bypassed. Retain the CTS requirements in the ITS.

**Response** Added discussion to Section 3.3A CTS DOC L10 to support change in mode applicability.

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**Comment 3.3.10-01**

Section 3.3A DOD 10  
CTS 3.5.1, Table 3.5.1-1, Function 3, Intermediate Range Channels  
ITS 3.3.10, LCO

CTS Table 3.5.1-1 indicates the total number of intermediate range channels is 2 with the minimum Operable channels of 1. The STS requires 2 Operable intermediate range channels. ANO-1 ITS LCO 3.3.10 requires one Operable channel, consistent with the minimum Operable channels of the CTS.

Comment: The ITS requirement of one Operable intermediate range channel is not consistent with the STS format which generally requires that the total number of channels in a given function be required Operable. Specification of a single required channel in ITS LCO 3.3.10 is also inconsistent with the application of the STS philosophy to the other protection system LCOs which require Operability of all channels in a function. Revise ITS LCO 3.3.10 to require Operability of both source range channels. This will also require modification of the conditions and required actions for ITS 3.3.10.

**Response** Added discussion to Section 3.3A NUREG 1430 DOD 10 to include other power indications that are available.

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**Comment 3.3.10-02**

Section 3.3A DOC L10  
CTS 3.5.1, Table 3.5.1-1, Function 3, Intermediate Range Channel, Note 2  
ITS 3.3.10, Applicability

CTS Table 3.5.1-1 does not explicitly address the modes in which the intermediate range channels are required to be Operable, but it does allow that hot shutdown is not required if both intermediate range channels fail when at least 2 power range channels are indicating greater than 10% power. The ANO-1 ITS has adopted the STS requirement that intermediate range Operability be required in Mode 2 and below. Thus the ITS does not require intermediate range Operability above 5% RTP, based upon the definition of Mode 2.

The ITS Bases indicate that the startup rate rod withdrawal inhibit function provided by the intermediate range detectors may function up to 10% RTP as indicated on the power range channels.

Comment: DOC L10 does not provide a technical justification for this change. Neither the DOC, nor the ITS Bases discuss the rationale for allowing the intermediate range channels to be inoperable between 5% RTP and 10% RTP when the intermediate range rod withdrawal inhibit is not bypassed. Retain the CTS requirements in the ITS.

**Response** Added discussion to Section 3.3A CTS DOC L10 to support change in mode applicability.

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**Comment 3.3.11-01**

Section 3.3C DOCs LA1, A8, A13, and M8, and DODs 5 and 11  
CTS 3.5.1.15, Table 3.5.1-1, EFIC Function 1.c, 1.d, 1.e 2.b, 3.b, Notes 15, 19  
ITS 3.3.11, 3.3.12, 3.3.13, 3.3.14 Applicable Modes and Required Actions

CTS 3.5.1.15 specifies conditions for Operability of the EFIC low steam generator pressure, loss of reactor coolant pump (RCP), and loss of main feedwater pump (MFP) functions. This section notes that these functions are bypassed at cold shutdown. Table 3.5.1-1 requires Operability of these functions, but notes that they may be bypassed under the specified applicable conditions described in Table 3.5.1-1.

These CTS requirements are inconsistent. CTS 3.3.1.15 indicates that Operability is not required below the operational bypass conditions, but indicates that the functions are bypassed in shutdown bypass. Table 3.5.1-1 Note 19 indicates that the low steam generator function may be bypassed below 750 psig, but that the bypass is automatically removed when pressure exceeds 750 psig. Since the CTS treats the automatic bypass removal function as part of the low pressure channel, channel Operability must be required below 750 psig to ensure Operability of the automatic removal function as pressure increases through 750 psig. The last paragraph of the CTS Bases indicates that the same situation exists with respect to the other EFIC functions, except for low steam generator level.

The ITS does not include a reference to the bypasses in LCO 3.3.11 and appears to base the applicable modes or other specified conditions upon the conditions for Operability specified in CTS 3.5.1.15.

Comment: The applicability requirements of the ITS do not require Operability of the automatic bypass functions when the functions must be available to ensure bypass removal in the event of start up transients. It also creates an incongruous situation in that the low steam generator pressure function is not required to be Operable at its trip setpoint.

(1) The applicability for the steam generator low pressure, steam generator differential pressure should be Mode 1, 2, 3 with a note that these functions may be bypassed in Mode 3 when steam generator pressure is below 750 psig.

(2) The STS applicability requirements for the loss of MFW function should be adopted.

(3) Since the CTS Bases indicates that the situation for the RCP status function is similar to the loss of MFW pumps function, the applicability requirements for the RCP status function should be the same as for the MFW pump function, i.e., Mode 1 and Modes 2 and 3 with STS footnote (a).

**Response** Comment (1) above is not incorporated. Current proposed wording is according to NUREG 1430 Table 3.3.11-1 and is consistent with the current license basis. Comment (2) and (3) above have been addressed by including appropriate discussions in the applicable bases as follows:

- 1) Added discussion to Section 3.3C NUREG 3.3.11 Bases Background Item 1.d, including associated Bases Insert B 3.3-95B, regarding function of automatic removal and its effect on channel operability.
  - 2) Added statement to Section 3.3C NUREG 3.3.11 Bases SR 3.3.11.2 that the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.
  - 3) Revised Section 3.3C ITS Bases 3.3.11 Background Items 1.c and 1.d on pages B 3.3.11-4 & 5 to incorporate aforementioned discussions.
  - 4) Revised Section 3.3C ITS Bases SR 3.3.11.2 to ensure the automatic bypass removal feature is tested as part of the CHANNEL FUNCTIONAL TEST.
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**Comment 3.3.11-02**

Section 3.3C DOC M4, DOD 5

CTS 3.5.1.15

ITS 3.3.11, Table 3.3.11-1, Function 3.a, Note (b), Required Action F.2.2

The CTS requires Operability of the steam generator low pressure function either under all conditions or when steam generator pressure exceeds 750 psig. (See comment 3.3.11-01 under Issue 2, for discussion of the ambiguity.)

ITS Table 3.3.11-1, Notes (a) and (b) require Operability of this function in Modes 1, 2, and 3 when pressure is greater than or equal to 750 psig except when all associated valves are closed. This is consistent with the STS note except that it omits the STS requirement that the exception apply only when the valves are also deactivated.

Required Action F.2.2 has also been added to allow closing the associated valves instead of reducing pressure below 750 psig after the reactor has been placed into Mode 3.

Comment: The addition of Note (b) is a less restrictive change which has not been justified in the ANO-1 application. Furthermore, DOD 5 does not justify the deviation from STS Note (b). Delete Note (b) and Required Action F.2.2 from ITS 3.3.11.

- Response**
- 1) Modified Section 3.3C CTS DOC M4 to remove discussion of proposed Action F.2.2.
  - 2) Modified Section 3.3C NUREG 1430 DOD-5 to delete discussion proposing a change to Note (b).
  - 3) Modified Section 3.3C NUREG 1430 DOD 6 to delete discussion of proposed Action F.2.2.
  - 4) Deleted Section 3.3C NUREG 3.3.11 Action F.2.2.
  - 5) Revised Section 3.3C NUREG 1430 Table 3.3.11-1 to require deactivation of valves closed in Note (b).
  - 6) Revised Section 3.3C NUREG 3.3.13 Insert 3.3-33A Action C.2.2 to require deactivating valves closed in Note (b) of Table 3.3.11-1.
  - 7) Revised Section 3.3C NUREG 3.3.11 Bases Action D.1, D.2, E.1, F.1, and F.2 to delete discussion of Action F.2.2 and include requirement to deactivate associated valves.
  - 8) Revised Section 3.3C NUREG 3.3.12 Bases Insert B 3.3-114A to require deactivation of valves closed in Note (b) of Table 3.3.11-1.

- 9) Revised Section 3.3C NUREG 3.3.13 Bases Insert B 3.3-120A to require deactivation of valves closed in Note (b) of Table 3.3.11-1.
- 10) Deleted Action F.2.2 from Section 3.3C ITS 3.3.11 on page 3.3.11-2.
- 11) Added requirement to deactivate valves associated with Section 3.3C ITS Table 3.3.11-1 Note (b) on page 3.3.11-4.
- 12) Added requirement to deactivate valves in Section 3.3C ITS 3.3.12 Action E.2.2 on page 3.3.12-2 associated with ITS Table 3.3.11-1 Note (b).
- 13) Added requirement to deactivate valves in Section 3.3C ITS 3.3.13 Action C.2.2 on page 3.3.13-2 associated with ITS Table 3.3.11-1 Note (b).
- 14) Revised Section 3.3C ITS 3.3.11 Bases Action D.1, D.2, E.1, F.1, and F.2 to delete discussion associated with Action F.2.2 and include requirement to deactivate associated valves.
- 15) Revised Section 3.3C ITS 3.3.12 Bases Action E.2.2 and ITS 3.3.13 Bases Action C.2.2 to include requirement to deactivate associated valves.

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**Comment 3.3.11-03**

Section 3.3C DOD 7  
CTS 3.5.1  
ITS 3.3.11, Table 3.3.11-1

The CTS does not provide trip setpoints for EFIC functions. The STS provides setpoint requirements in the form of Allowable Values. The ITS does not include allowable values based upon the fact that this information is not included in the CTS.

Comment: Not including allowable values for the EFIC initiation functions is inconsistent with the STS format. Allowable values must be specified to adequately specify Operability requirements. Provide allowable values based upon the application of a formal setpoint analysis methodology.

- Response**
- 1) Added Section 3.3C CTS DOC M10 to discuss addition of Allowable Values Column to EFIC functions.
  - 2) Revised Section 3.3C CTS Table 3.3.5-1 to include Allowable Values Column.
  - 3) Deleted Section 3.3C NUREG 1430 DOD 7 since Allowable Values Column is being retained.
  - 4) Revised Section 3.3C NUREG Table 3.3.11-1 to undelete Allowable Values Column and insert ANO-1 specific values.
  - 5) Added Allowable Values column with ANO-1 specific values to Section 3.3C ITS Table 3.3.11-1 on page 3.3.11-4.

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**Comment 3.3.11-04**

Section 3.3C DOC A14, DOD 10  
CTS 4.1, Table 4.1-1 Function 53.d  
ITS 3.3.11, Table 3.3.11-1

CTS 4.1 requires calibration of the loss of main feed water pump channels. The STS also requires calibration of these channels. The calibration requirement is not included in the

ITS based upon the fact that the bistable function is performed in the reactor protection system.

Comment: From a TS perspective, the loss of main feedwater pump instrumentation function is part of both the RPS and EFIC systems. Consequently, the requirement for calibration of this function must be included in the EFIC specification as well as the RPS specification. Failure to include the requirement in the EFIC specification could lead to a failure to recognize that missing the required calibration affects the Operability of EFIC as well as RPS. Add SR 3.3.11.3 to the list of surveillance requirements for function 1.a in ITS Table 3.3.11-1.

- Response**
- 1) Deleted Section 3.3C CTS DOC A14.
  - 2) Revised Section 3.3C CTS Table 4.1-1 to retain calibration for function 53.d.
  - 3) Deleted Section 3.3C NUREG 1430 DOD 10.
  - 4) Revised Section 3.3C NUREG Table 3.3.11-1 Function 1.a to retain SR 3.3.11.3.
  - 5) Added SR 3.3.11.3 requirement to Section 3.3C ITS Table 3.3.11-1 Function 1.a.
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**Comment 3.3.12-01**

Section 3.3C DOC LA1  
CTS 3.5.1, Table 3.5.1-1, EFIC Function 1.a, 2.a, 3.a  
ITS 3.3.12, Condition A, Required Action A.1

CTS Table 3.5.1-1, Column 2, indicates that one manual channel is required for trip. Required Action A.1 of ITS 3.3.12 requires that a train with an inoperable manual initiation switch be placed in trip within 72 hours. The ITS Bases indicates that this action will place the function in a "half-trip."

Comment: The ITS Bases are inconsistent with the CTS. If CTS Table 3.5.1-1 is correct, placing the associated train in trip will cause EFIC initiation, which is not a desirable action for Condition A. Confirm which representation of the EFIC design is correct and modify either ITS 3.3.12 Required Action A.1 appropriately or include in DOC L1 a discussion of the apparent conflict with the CTS.

- Response**
- 1) Marked Section 3.3C CTS DOC A6 as Not Used. Discussion already included in DOC L1.
  - 2) Revised Section 3.3C CTS Table 3.5.1-1 EFIC function 1.a, 2.a, and 3.a to reference DOC L1 and NUREG 3.3.12 Action B.2 and changed letter designations.
  - 3) Changed letter designations to NUREG 3.3.12 reference in Section 3.3C CTS Table 3.5.1-1, Note 1, on page 45e-2.
  - 4) Revised Section 3.3C NUREG 1430 DOD 14 to discuss meaning of required NUREG 3.3.12 Actions.
  - 5) Created new Section 3.3C NUREG 3.3.12 Action B/B.1 to address both manual switches in a train being inoperable and change letter designations of other actions accordingly. Also revised wording of other actions to clarify intent of actions.
  - 6) Revised Section 3.3C NUREG Bases 3.3.12 Actions to clarify intent of actions. Change letter designations due to new bases section for Action B/B.1 described in Item 5 above.

- 7) Created new Bases for new Action B/B.1 in Item 5 above. Added this bases to new Section 3.3C NUREG Bases 3.3.12 Insert B 3.3-114B.
  - 8) Revised Section 3.3C ITS 3.3.12 on pages 3.3.12-1 & -2 to clarify wording of actions, incorporate new Action B/B.1, and change action letter designations accordingly.
  - 9) Revised Section 3.3C ITS Bases 3.3.12 Actions on pages B 3.3.12-2 & -3 to clarify intent of actions, incorporate bases discussion of new Action B/B.1, and change letter designations for actions as appropriate.
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**Comment 3.3.13-01**

Section 3.3C DOC M7  
CTS 3.5.1, Table 3.5.1-1, EFIC Columns 4 and 5  
ITS 3.3.13 Required Action A.1

CTS Table 3.5.1-1 requires a minimum of two Operable channels for each EFIC function with a minimum degree of redundancy of 1. Note 1 requires placing the reactor in hot shutdown within 12 hours if these requirements are not met.

ITS 3.3.13 Required Action A.1 allows operation for 72 hours with one EFIC logic train inoperable. Since there are only two channels of EFIC logic per function, this condition is equivalent to allowing operation with a minimum degree of redundancy of 0 in each affected channel.

Comment: The ITS requirement represents a less restrictive change that has not been justified. Delete Action A and make Required Actions B.1 and B.2 applicable to a condition in which one EFIC train is inoperable.

- Response**
- 1) Deleted Section 3.3C CTS DOC A12 and moved applicable content to new DOC L4.
  - 2) Created new Section 3.3C CTS DOC L4 to discuss allowing 72 hours (vs. 1 hour) restore time for logic train inoperability.
  - 3) Revised Section 3.3C CTS Table 3.5.1-1 Function 1.f to reference DOC L4.
  - 4) Created new Section 3.3C NSHC 3.3C L4 to address criteria for allowing up to 72 hours of operation with an inoperable EFIC logic train.
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**Comment 3.3.14-01**

Section 3.3C DOC M8  
CTS 3.5.1, Table 3.5.1-1, EFIC Columns 4 and 5  
ITS 3.3.14 Required Action A.1

CTS Table 3.5.1-1, requires a minimum of two Operable channels for each EFIC function with a minimum degree of redundancy of 1. Note 1 requires placing the reactor in hot shutdown within 12 hours if these requirements are not met.

ITS 3.3.14 Required Action A.1 allows operation for 72 hours with one EFIC vector logic train inoperable. Since there are only two channels of EFIC logic per function, this condition is equivalent to allowing operation with a minimum degree of redundancy of 0 in each affected channel.

Comment: The ITS represents a less restrictive change that has not been justified. Delete Action A and make Required Actions B.1 and B.2 applicable to a condition in which one EFIC train is inoperable.

- Response**
- 1) Included discussion in new Section 3.3C CTS DOC L4 (see comment 3.3.13-01) allowing 72 hours (vs. 1 hour) restore time for EFIC vector logic train inoperability.
  - 2) Revised Section 3.3C CTS Table 3.5.1-1 insert 3.3.14 at bottom of EFIC page to reference DOC L4.
  - 3) Included justification in new Section 3.3C NSHC 3.3C L4 (see comment 3.3.13.01) to address criteria for allowing up to 72 hours of operation with an inoperable EFIC vector logic train.

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**Comment 3.3.15-01**  
Section 3.3D DOCs L11, L5, L6, L7, L8, L9  
CTS 3.3.7, Table 3.5.1  
ITS 3.3.15, Required Actions B.1 and C.1

For many post accident monitoring functions, the ITS allows less restrictive Completion Times than are provided in the CTS. In some cases a greater number of inoperable channels is also allowed.

Comment: The DOCs identified above describe, but do not justify these changes. Provide a safety justification for the relaxed completion times and, where applicable, for allowing operation with two inoperable channels.

- Response** Revised Section 3.3D CTS DOCs L5, L6, L7, L8, L9, and L11 to include justifications for extending allotted Completion Times to be consistent with ITS.

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**Comment 3.3.15-02**  
Section 3.3D DOC A1  
CTS 3.14 Insert CTS 66eA

Insert CTS 66eA indicates that notes are to be added for all PAM functions to ITS Actions B, C, and G.

Comment: There are no notes applicable to all PAM functions in ITS 3.3.15 Actions B, C, and G. Explain the discrepancy between the CTS markup and the ITS.

- Response** Deleted referenced ITS notes from Section 3.3D CTS Insert 66eA.
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**Comment 3.3.15-03**

Section 3.3D DOC L12  
CTS 4.1, Table 4.1-1, Function 57  
ITS 3.3.15, SR 3.3.15.1

CTS Table 4.1-1 requires a daily channel check of the Containment High Range Radiation Monitors. ITS SR 3.3.15.1 requires this check every 31 days. DOC L12 is referenced for this change.

Comment: DOC L12 does not discuss the change to the surveillance interval. Provide a safety justification in the DOC for the less restrictive surveillance interval.

**Response** This item was addressed in another ITS Section (Section 3.3D CTS DOC L10).

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**Comment 3.3.16-01**

Section 3.3D DOC L13  
CTS 4.1, Table 4.1-1, Item 28.b  
ITS SR 3.3.16.1 and SR 3.3.16.2

CTS Table 4.1-1 Item 28.b, Remark (1) requires that channel functional testing of the control room area radiation monitoring system instrumentation include confirmation that the self checking feature of the detector is Operable. DOC L13 indicates that this test is deleted since the self-check feature is not critical to the instrument's safety function.

Comment: Operability of the self-check feature will improve the reliability of the radiation monitoring function even though this testing does not need to be controlled by the TS. Provisions for testing the self-check feature should not be deleted, but should be relocated to the Bases or a licensee controlled document as an LA-type change.

**Response** The control room area monitor is no longer credited for the function of control room isolation (reference Amendment 196, dated May 19, 1999). The intake duct process monitor now provides this function. Therefore, deletion of this requirement is acceptable.

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**Arkansas Nuclear One - Unit 1**  
**Improved TS Review ANO Comment Resolutions**  
**ITS Section 3.3: Instrumentation**

**Comment ANO-329**

CTS 3.7.1.F is related to the DG LOPS relays. Revise the CTS markups to show this requirement as addressed in Section 3.3D. See NRC Comment 3.8.1-03 for additional information.

- Response**
- 1) Added CTS Page 56 with appropriate markups to Section 3.3D.
  - 2) Added reference to TS 3.7.1.F to Section 3.3D NUREG 3.3.8 Page 3.3-20.

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**Comment ANO-332**

Evaluate generic Change TSTF-264, Rev 0 for inclusion in the ANO-1 ITS. This change deletes

SRs requiring verification of overlap from source range to intermediate range and from intermediate range to power range, as these checks are encompassed by the performance of Channel Checks.

- Response**
- 1) Revised Section 3.3A DOC M10 to remove discussion of overlap and reference CTS Table 3.5.1-1.
  - 2) Revised Section 3.3A DOC LA1 to include relocation of CTS 3.5.1.5 to relevant bases sections.
  - 3) Revised CTS Section 3.3A LCO 3.5.1.5 references.
  - 4) Revised Section 3.3A CTS Table 3.5.1-1 on page 45e to include NUREG 1430 3.3.10 Condition A.
  - 5) Revised Section 3.3A DOD 15 to present TSTF 264, Rev 0 justifications.
  - 6) Marked Section 3.3A DOD 16 as "not used" due to incorporation of TSTF 264, Rev 0.
  - 7) Revised Section 3.3A NUREG 3.3.10 Action A.1 references.
  - 8) Revised Section 3.3A NUREG SR 3.3.10.3 to reference DOD 15.
  - 9) Deleted Section 3.3A NUREG 1430 Insert 3.3-26A due to TSTF 264, Rev 0 incorporation.
  - 10) Added TSTF 264, Rev 0 bases statements to Section 3.3A NUREG Bases SR 3.3.1.1, SR 3.3.9.1, and SR 3.3.10.1. This resulted in creating new inserts B3.3-25A, B3.3-83A, and B3.3-89B.
  - 11) Deleted Section 3.3A NUREG Bases 3.3.10.3 on page B 3.3-89 & -90.
  - 12) Deleted Section 3.3A ITS 3.3.10 - SR 3.3.10.4 on page 3.3.10-2.
  - 13) Inserted TSTF 264, Rev. 0 statements to Section 3.3A ITS Bases SR 3.3.1.1, SR 3.3.9.1, and SR 3.3.10.1.
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**Comment ANO-333**

Evaluate generic Change TSTF-286, Rev 2 for inclusion in the ANO-1 ITS. This change provides a definition for operations involving positive reactivity additions in both ITS 3.3.9 and 3.3.10.

- Response**
- 1) Created new Section 3.3A DOC L16 to discuss incorporation of TSTF 286, Rev 2.
  - 2) Revised Section 3.3A LCO 3.3.10 Condition A for CTS Table 3.5.1-1 page 45e to incorporate TSTF 286, Rev. 2.
  - 3) Created new Section 3.3A NSHC 3.3A L16 due to incorporating TSTF 286, Rev. 2.
  - 4) Created new Section 3.3A DOD 34 to identify incorporation of TSTF 286, Rev. 2.
  - 5) Revised Section 3.3A NUREG 3.3.9 Action A.1 on page 3.3-22 to incorporate TSTF 286, Rev. 2.
  - 6) Revised Section 3.3A NUREG 3.3.10 Action A.1 on page 3.3-25 to incorporate TSTF 286, Rev. 2.
  - 7) Created new Section 3.3A Insert B 3.3-82B to NUREG 3.3.9 Bases page B 3.3-82 to incorporate TSTF 286, Rev. 2.
  - 8) Revised Section 3.3A NUREG 3.3.10 Bases on page B 3.3-88 to incorporate TSTF 286, Rev. 2.
  - 9) Revised Section 3.3A ITS 3.3.9 Action A.1 on page 3.3.9-1 to incorporate TSTF 286, Rev. 2.
  - 10) Revised Section 3.3A ITS 3.3.10 Action A.1 on page 3.3.10-1 to incorporate TSTF 286, Rev. 2.
  - 11) Revised Section 3.3A ITS 3.3.9 Bases on page B 3.3.9-2 to incorporate TSTF 286, Rev. 2.
  - 12) Revised Section 3.3A ITS 3.3.10 Bases on page B 3.3.10-2 to incorporate TSTF 286, Rev. 2.

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**Comment ANO-359**

Incorporate new loss of voltage and undervoltage TS allowable values as approved in ANO-1 TS Amendment 211.

- Response**
- 1) Revised Section 3.3D CTS Page 42a, incorporating Amendment 211.
  - 2) Revised Section 3.3D CTS Page 43b, incorporating Amendment 211.
  - 3) Revised Section 3.3D NUREG 1430 Page 3.3-21 to incorporate new values of Amendment 211.
  - 4) Revised Section 3.3D Insert B.3.3-72A to incorporate bases changes associated with Amendment 211.
  - 5) Revised Section 3.3D NUREG 1430 Page B 3.3-74 to indicate setpoints are contained within the specifications.
  - 6) Revised Section 3.3D Insert B.3.3-75A to incorporate bases changes associated with Amendment 211.
  - 7) Revised Section 3.3D DOD 5 to include changes made to bases pages described in Item 5 above.
  - 8) Revised Section 3.3D ITS Page 3.3.8-2 to incorporate values from TS Amendment 211.

- 9) Revised Section 3.3D ITS Bases Pages B 3.3.8-1 and B 3.3.8-2 to incorporate Amendment 211 wording.
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**Arkansas Nuclear One - Unit 1  
Improved TS Review NRC Comment Resolutions  
ITS Section 3.7: Plant Systems**

**Comment 3.7-01**

ITS SR 3.7.1.1 Note 2  
STS SR 3.7.1.1  
CTS Table 4.1-2 Item 4  
DOD 1

ITS SR 3.7.1.1 added Note 2, which exempts compliance with the SR during main steam hydrotesting in MODE 3. Neither CTS nor STS contained this information. Comment: Provide justification for the addition of Note 2.

- Response**
- 1) Revised 3.7DOD-01 to delete the reference to a Note being added to SR 3.7.1.1.
  - 2) Revised NUREG-1430 page 3.7-2 to delete proposed SR 3.7.1.1 Note 2.
  - 3) Revised proposed ITS page 3.7.1-2 to reflect change in markup.
  - 4) Revised NUREG-1430 Bases page 3.7-5 and deleted Bases insert B3.7-5A to reflect deletion of proposed SR 3.7.1.1 Note 2.
  - 5) Revised proposed ITS Bases page B 3.7.1-4 to reflect change in markup.
  - 6) Revised CTS markup page 40-1 to remove reference to SR 3.7.1.1 Note 2.
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**Comment 3.7-02**

ITS 3.7.3 LCO  
STS 3.7.3 LCO  
DOD 9

The main feedwater control valves and other associated valves are not currently required by the CTS. The ITS proposes requirements for the MFIVs only and not the other valves listed in the STS. The other valves will be administratively controlled. Comment: Provide location of documentation of administrative controls for these valves.

- Response**
- 1) Revised CTS markup pages 40-3 and 73a to reflect the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS. This includes changes to CTS 3.4.2 Required Actions, as discussed in 3.7DOC-M4 and 3.7DOC-L4.
  - 2) Revised 3.7DOC-M4 to reflect the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
  - 3) Revised 3.7DOC-L4 and 3.7NSHC-L4 to reflect the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS and the change in the allowed outage time for an inoperable MFIV from 24 hours to 72 hours.
  - 4) Revised NUREG-1430 markup pages 3.7-7 and 3.7-8 to reflect the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS. 3.7-DOD-04 has been removed from these markup pages.

- 5) Revised NUREG-1430 markup page Inserts 3.7-7A and 3.7-8A to reflect changes more in keeping with the NUREG, and the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 6) Revised 3.7DOD-04 to delete discussions related to NUREG LCO 3.7.3 and MFIVs. Revised 3.7DOD-03 to include the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the discussion.
- 7) Revised 3.7DOD-09 to discuss the plant specific terminology used, and the addition of new Condition C.
- 8) Revised proposed ITS pages 3.7.3-1 and 3.7.3-2 to reflect changes in the NUREG-1430 markup pages.
- 9) Revised NUREG-1430 Bases markup pages B 3.7-13 through B 3.7-18 to show the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 10) Revised NUREG-1430 Bases markup page Inserts B3.7-13A, B3.7-14A show the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 11) Revised 3.7DOD-23 to reflect incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 12) Deleted NUREG-1430 Bases markup page Inserts B3.7-15A and B3.7-15B due to the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 13) Drafted NUREG-1430 Bases markup page Insert B3.7-16A due to the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 14) Revised NUREG-1430 Bases markup page Insert B3.7-18a due to the incorporation of the main feedwater block valves, low load feedwater control valves and startup feedwater control valves in the ITS.
- 15) Revised the proposed ITS Bases to reflect the changes in the NUREG-1430 Bases markup pages.

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**Comment 3.7-03**

STS 3.7.4 Entire Specification  
DOD 11

STS 3.7.4 provides the technical specification for the atmospheric dump valves (ADV)s. The ADVs and MSSVs are important in the recovery from a main steam line break as discussed in the ANO-1 SAR Chapter 14. Comment: Provide a discussion about which part of STS 3.7.4 is unreasonable to incorporate into the ANO-1 Technical Specifications.

**Response** The SAR Section 14 discussions do provide information on the use of the ADVs in the response to a loss of all unit AC power accident. However, the discussions concerning the ADVs were not intended to present the ADVs as credited in the analysis for this accident.

In fact, none of the Section 14 analyses credit the operation of the ADVs in controlling steam generator pressure. Additional information has been added to 3.7DOD-11.

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**Comment 3.7-04**

ITS 3.7.5 LCO Note  
STS 3.7.5 LCO Note  
CTS 3.4.3.1

ITS 3.7.5 LCO Note adds the sentence “when steam generator is relied upon for heat removal.” This aspect is covered in the Applicability statement. No DOC was provided for this edit.

Comment: Remove the edit from the ITS 3.7.5 LCO Note.

- Response**
- 1) Revised NUREG-1430 markup page 3.7-11 to remove the addition to the LCO Note.
  - 2) Revised proposed ITS page 3.7.5-1 to reflect the change to the markup.
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**Comment 3.7-05**

ITS 3.7.5 Action A  
STS 3.7.5 Action A  
CTS 3.4.4.2

ITS 3.7.5 Action A adds the following statement to the condition statement: “in Mode 1, 2, or 3.” No DOC was provided for this edit. The proposed change is not consistent with STS 3.7.5 Action statement A or CTS 3.4.4.2. Comment: Remove edit or provide justification for the change.

- Response**
- 1) Revised NUREG-1430 markup page 3.7-11 to remove the addition to the Condition.
  - 2) Revised proposed ITS page 3.7.5-1 to reflect the change to the markup.
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**Comment 3.7-06**

ITS SR 3.7.5.3 Note 1 and SR 3.7.5.4 Note 1  
STS SR 3.7.5.3 Note 1 and SR 3.7.5.4 Note 1  
CTS 4.8.1.e.2  
DOC M27  
DOD 14

CTS 4.8.1.e.2 does not require test performance until 24 hours after reaching Hot Shutdown condition. STS SR 3.7.5.3 Note 1 and SR 3.7.5.4 Note 1 does not require testing until [24] hours after reaching [800] psig in the steam generators. DOD 14 justify that current plant practices are to perform the testing at low pressure conditions. However, M27 implies that STS SR 3.7.5.3 Note 1 and SR 3.7.5.4 Note 1 are included in the ITS, therefore retaining CTS 4.8.1.e.2 exception is not required. The ITS as shown does not incorporate STS SR 3.7.5.3 Note 1 and SR 3.7.5.4 Note 1. Comment: Provide clarification as to whether the current licensing basis is being maintained or whether NUREG-1430 is being incorporated.

**Response** DOC M-27 does not imply that these NUREG Notes are retained. ITS SR 3.7.5.3 includes the CTS 4.8.1.e.1, 4.8.1.e.2 and 4.8.1.e.5 requirements. Of these requirements, only 4.8.1.e.2 does not require testing until 24 hours after reaching Hot Shutdown conditions. SR 3.7.5.4 includes the CTS 4.8.1.e.2 and 4.8.1.e.3. Again, only 4.8.1.e.2 does not require testing until 24 hours after reaching Hot Shutdown conditions. The acceptance criteria of CTS 4.8.1.e.2 is satisfied if the steam supply valves come open. It does not require that sufficient steam be supplied to the turbine-driven EFW pump to feed the SG. Therefore, the allowance afforded by the NUREG SR 3.7.5.3 and SR 3.7.5.4 Notes is not necessary. Although this is a more restrictive change, it maintains consistency with the current license basis for CTS 4.8.1.e.1, 4.8.1.e.3, and 4.8.1.e.5.

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**Comment 3.7-07**  
ITS 3.7.7 LCO  
STS 3.7.8 LCO  
CTS 3.3.1 (E)

CTS 3.3.1 (E) requires both low pressure injection coolers and their cooling water supplies shall be operable. The CTS markup indicated "and their cooling water supplies shall be operable" was incorporated into 3.7.7 LCO. ITS 3.7.7 LCO is two SWS loops shall be OPERABLE. The disposition of the second part of CTS 3.3.1 (E) is not clear. No DOC was provided. Comment: Provide additional information concerning the disposition of the phrase "and their cooling water supplies shall be operable."

**Response** 1) Drafted 3.7DOC-A15 to discuss the connection between CTS 3.3.1.E and ITS 3.7.7.  
2) Revised CTS page 36 to show 3.7DOC-A15.

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**Comment 3.7-08**  
STS SR 3.7.8.3  
CTS 4.5.1.1.2(a)(2), 3.3.1(C)  
DOC A1  
DOD 18

CTS 4.5.1.1.2(a)(2) requires verification of the engineered safeguard function of the service water system that supplies cooling water to the decay heat removal coolers shall be made to demonstrate operability of the coolers. STS SR 3.7.8.3 verifies each SWS pump starts automatically on an actual or simulated actuation signal. ITS did not retain STS SR 3.7.8.3. DOD 18 discusses that service water pumps are in service during normal operation and since they are already running, do not get an engineered safety actuation signal. DOD 18 further explains the pumps will automatically restart following restoration of power after a bus undervoltage.

STS SR 3.7.8.3 does not specify that only the engineered safeguards start signal is tested, therefore unable to determine if the SR includes loss of power start signal testing DOD 18 states that credit is taken for having the required pumps running therefore an engineered safeguards automatic start signal is not required. ITS does not include a SR to verify required pumps from the required independent buses are in operation. CTS 3.3.1 (C)

requires two out of three service water pumps shall be operable, powered from independent essential buses to provide redundant and independent flow paths. ITS should verify service water pumps are maintained in the configuration required by the SAR.

Comment: Provide additional information where ITS tests the loss of power start signals for service water pumps. Provide additional information on the SAR assumed configuration of service water pumps and how ITS verifies the SAR configuration.

- Response**
- 1) Revised NUREG-1430 markup page 3.7-20 to show the retention of SR 3.7.8.3 as ITS SR 3.7.7.3.
  - 2) Revised 3.7DOD-18 to discuss the arrangement of the ANO-1 SW pumps.
  - 3) Revised proposed ITS page 3.7.7-2 to reflect the change in markup.
  - 4) Revised 3.7DOC-M12 to included ITS SR 3.7.7.3.
  - 5) Revised NUREG-1430 Bases markup pages B 3.7-44 and B 3.7-45 to retain NUREG SR 3.7.8.3 as ITS SR 3.7.7.3.
  - 6) Revised proposed ITS Bases page B 3.7.7-4 to reflect the change in Bases markup.

The service water system is a system that is required to be in operation to support normal plant operations. If the service water system is not operating properly, unit operation would be curtailed due to the loss of this cooling system. In the event a service water pump tripped, or the service water flow degraded, the operator would be alerted by any of several different alarms. In addition, service water parameters, flow and pressure, are verified on a frequent basis to ensure that components required for normal operation receive sufficient cooling water. This provides assurance that the required pumps and service water loops are available. This administrative control of service water loop status is consistent with the current license basis. Since the current license basis and NUREG-1430 do not require separate verifications of service water pump status, none has been proposed in the ITS.

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- Comment** 3.7-09  
ITS SR 3.7.8.1, SR 3.7.8.2, and SR 3.7.8.3  
STS SR 3.7.9.1 and SR 3.7.9.2  
CTS 3.11.1.1 and 3.11.1.2  
DOC LA1 (Bases)  
DOD 20

CTS 3.11.1.1 and 3.11.1.2 specify the emergency cooling pond volume, level and average water temperature requirements. The CTS markup indicates DOC LA1 which justifies relocation of the information to the Bases. ITS SR 3.7.8.1, SR 3.7.8.2, and SR 3.7.8.3 incorporate these requirements. The CTS markup should not identify the change as DOC LA1.

Comment: Identify correct DOC for the change.

- Response**
- 1) Revised 3.7DOC-LA1 to delete CTS 3.11.1 from the list of relocations to the Bases.
  - 2) Revised CTS markup page 66a to delete 3.7DOC-LA1 from the markup.
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**Comment 3.7-10**

ITS SR 3.7.8.2  
STS SR 3.7.9.2  
DOD 20

ITS SR 3.7.8.2 measures the average water temperature “at the point of discharge from the ECP.” The Bases document should contain information about Surveillance Requirement completion. The SR should contain the requirement to measure average water temperature and the Bases should contain measurement location information. Comment: Provide additional information why the temperature measuring point is part of SR 3.7.8.2 or include the temperature measuring point in the bases.

- Response**
- 1) Revised CTS markup page 110a to show portion of CTS 4.13.1.2 detailing method of performance of the SR relocated to the Bases by 3.7DOC-LA1.
  - 2) Revised 3.7DOC-LA1 to reflect that a portion of CTS 4.13.1.2 is relocated to the ITS 3.7.8 Bases.
  - 3) Revised NUREG-1430 markup page 3.7-22 to remove information on details of performance from SR 3.7.9.2.
  - 4) Revised proposed ITS page 3.7.8-1 to reflect the change in markup.
  - 5) Revised NUREG-1430 Bases page Insert B3.7-49a to incorporate details of performance relocated from CTS 4.13.1.2.
  - 6) Revised proposed ITS Bases page 3.7.8-3 to incorporate change in Bases markup.

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**Comment 3.7-11**

ITS SR 3.7.8.3  
Bases 3.7.8.3  
CTS 4.13.1.4  
DOC LA1  
DOD 20

CTS 4.13.1.4 requires a visual inspection, every 12 months, of the banks of the pond and the concrete spillway. DOC LA1 discusses relocating this information to the Bases SR 3.7.8.3. ITS SR 3.7.8.3 verifies contained water volume of ECP  $\geq 70$  acre-ft at a water level of 5 ft. but does not include visual inspection performance. The majority of the information in CTS 4.13.1.4 can be relocated to the Bases, but a Surveillance Requirement to perform a visual inspection is required. Comment: Revise ITS to include an ECP visual inspection.

- Response**
- 1) Revised NUREG-1430 markup page 3.7-22 to show incorporation of SR 3.7.8.4 to verify earth portions of ECP and spillway are not undercut or eroded by wave action, and do not show apparent changes in appearance once per 12 months.
  - 2) Revised 3.7DOD-20 to include a discussion on the retention of the CTS 4.13.1.4 requirements.
  - 3) Added proposed ITS page 3.7.8-2 to incorporate SR 3.7.8.4 per NUREG-1430 markup.

- 4) Revised NUREG-1430 Bases markup page B 3.7-48 and Insert B3.7-49C to reflect the addition of SR 3.7.8.4.
- 5) Revised proposed ITS Bases page B 3.7.8-2 and B 3.7.8-3 to reflect change in Bases markup.

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**Comment 3.7-12**

ITS SR 3.7.9.4  
STS SR 3.7.10.4  
DOD 31

DOD 31 states that STS SR 3.7.10.4 is not adopted since the SRP Section 6.4 only requires periodic verification of control room emergency ventilation system designs with < 0.25 volume changes per hour. The ANO-1 system is based on  $\geq 3$  volume changes per hour. This appears to be in error. The SRP Section 6.4 Rev. 2 (dated July 1981) states the following:

*3. Pressurization Systems*

*Ventilation systems that will pressurize the control room during a radiation emergency should meet the following requirements:*

- 1. Systems having pressurization rates of greater than or equal to 0.5 volume changes per hour should be subject to periodic verification (every 18 months) that the makeup is  $\pm 10\%$  of design value. During plant construction or after any modification to the control room that might significantly affect its capability to maintain a positive pressure, measurements should be taken to verify that the control room is pressurized to at least 1/8-inch water gauge relative to all surrounding air spaces while applying makeup air at the design rate.*
- 2. Systems having pressurization rates of less than 0.5 and equal to or greater than 0.25 volume changes per hour should have identical testing requirements as indicated in (1), above. In addition, at the CP stage an analysis should be provided (based on the planned leaktight design features) that ensures the feasibility of maintaining 1/8-inch water gauge differential with the design makeup air flow rate.*
- 3. Systems having pressurization rates of less than 0.25 volume changes per hour should meet all the requirements for (2), above, except that periodic verification of control room pressurization (every 18 months) should be specified.*

As discussed above, the licensee should be following the guidance in 3.a. This is consistent with the 3 volume per hour described in SAR 9.7.2 (page 9.7-6). Comment: Adopt STS SR 3.7.10.4 or provide further justification for not adopting the SR.

**Response** DOD-31 does quote the SAR. However, the 3 room air changes per hour is the recirculation flow rate, not the pressurization rate. The ANO control room pressurization rate is ~0.5 volume changes per hour. Although ANO-1 was not licensed to the SRP, a surveillance requirement to verify system makeup flow rate has been incorporated in the ANO-1 ITS, based on the guidance contained in the SRP.

- 1) Revised NUREG-1430 markup page 3.7-25 to show the retention of SR 3.7.10.5 as ITS SR 3.7.9.4.
- 2) Revised 3.7DOD-32 to provide a discussion of the makeup air flow rate, addition of Bases reference to SRP 6.4, and the insertion of a Bases for the SR.
- 3) Revised proposed ITS page 3.7.9-2 to reflect the change in the NUREG-1430 markup page.
- 4) Revised NUREG-1430 Bases markup page B3.7-54 to show the incorporation of a Bases for NUREG SR 3.7.10.5
- 5) Drafted NUREG-1430 Bases page Insert B3.7-54A to provide a Bases for NUREG SR 3.7.10.5
- 6) Revised proposed ITS Bases page B 3.7.9-5 to reflect he change in the NUREG-1430 Bases markup page
- 7) Revised CTS markup page 108 to show the incorporation of ITS SR 3.7.9.4.
- 8) Drafted 3.7DOC-M29 to discuss the incorporation of ITS SR 3.7.9.4.
- 9) Revised 3.7DOD-31 to correct discussion of pressurization rate.

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**Comment** 3.7-13

ITS SR 3.7.10.1.  
CTS 4.10.1.a.2  
DOD 52

CTS 4.10.1.a.2 verifies control room air temperature is maintained  $\leq 84^{\circ}\text{F}$  D.B. SR 3.7.10.1 also verifies control room air temperature is maintained  $\leq 84^{\circ}\text{F}$ , but does not specify that the temperature is dry bulb (D.B.). ITS Bases SR 3.7.10.1 does not discuss that the temperature is dry bulb. Justification was not provided the dry bulb requirement removal. Comment: Provide justification for not including the method of temperature measurement in ITS or ITS Bases.

**Response** 1) Revised NUREG-1430 markup page 3.7-27 to show temperature acceptance criteria for ITS SR 3.7.10.1 is a dry bulb temperature.  
2) Revised proposed ITS page 3.7.10-2 to reflect the change in markup.

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**Comment** 3.7-14

STS 3.7.14 Entire Specification  
DOD 10

STS 3.7.14 provides the technical specification for the fuel storage pool water level. According to the ANO-1 SAR, a nominal water level of 23.5 feet above the top of the fuel storage racks is assumed in the local fuel bundle thermal-hydraulic analysis. Section 9.6.2.3, Safety Provision, Spent Fuel Pool Rack Design Bases assumes that 24 feet of

water over the active fuel line when assemblies are stored in the spent fuel storage racks. Additionally, Section 14.2.2.3.4, Results of Analysis (Fuel Handling Accident), assumes that the gases released from the fuel assembly pass through 23 feet of water. The water level of the spent fuel pool is an important assumption in several analyses. STS Bases 3.7.14 Applicable Safety Analysis states the minimum water level in the fuel storage pool meets the assumptions of the fuel handling accident described in Regulatory Guide 1.25. Comment: Since level indicators and alarms are provided on the spent fuel pool to detect leakage, and the water level of the spent fuel pool is an important assumption in several analyses, provide a justification for not incorporating specific portions of STS 3.7.14 into the ITS.

- Response**
- 1) Revised NUREG-1430 markup pages 3.7-33 through 3.7-37 to reflect the incorporation of NUREG-1430 LCO 3.7.14 as ITS LCO 3.7.13, and the subsequent renumbering of NUREG-1430 LCO 3.7.15 as ITS LCO 3.7.14 and LCO 3.7.16 as ITS LCO 3.7.15.
  - 2) Revised 3.7DOD-10 to discuss the plant specific terminology incorporated in ITS LCO 3.7.13.
  - 3) Revised 3.7DOD-49 to reflect the renumbering of NUREG-1430 LCO 3.7.16.
  - 4) Revised proposed ITS to incorporate NUREG-1430 LCO 3.7.14 as ITS LCO 3.7.13, and the subsequent renumbering of the existing ITS LCO 3.7.13 and LCO 3.7.14.
  - 5) Revised NUREG-1430 Bases markup pages B 3.7-70 through B 3.7-76 and Bases page Inserts B3.7-73A and B3.7-75A to reflect the incorporation of NUREG LCO 3.7.14 and the subsequent renumbering of NUREG-1430 LCO 3.7.15 and LCO 3.7.16.
  - 6) Incorporated NUREG-1430 Bases markup page Insert B 3.7-70A to provide an Applicable Safety Analyses discussion consistent with the ITS 3.9.6 Bases.
  - 7) Drafted 3.7DOD-58 to provide a discussion of the change to the ASA Bases.
  - 8) Revised proposed ITS Bases to reflect the changes in the NUREG-1430 Bases markup.
  - 9) Revised CTS markup pages 59a, 59b, 59c, and 74 to reflect the renumbering of NUREG-1430 LCO 3.7.15 and LCO 3.7.16, and the incorporation of NUREG-1430 LCO 3.7.14 as ITS LCO 3.7.13.
  - 10) Drafted 3.7DOC-M28 to discuss the incorporation of ITS LCO 3.7.13.
  - 11) Revised 3.7DOC-A8 to reflect the renumbering of NUREG-1430 LCO 3.7.15.

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**Comment 3.7-15**  
ITS LCO 3.7.14, 4.3.1.1  
STS LCO 3.7.16, 4.3.1.1  
ITS Bases 3.7.14 Applicable Safety Analysis  
CTS 3.8.16  
DOC LA3

CTS 3.8.16 requires that in the event a checkerboard storage configuration is deemed necessary for a portion of Region 2, vacant spaces adjacent to the faces of any fuel assembly which does not meet the Region 2 burnup criteria (non-restricted) shall be physically blocked before any such fuel assembly may be placed in Region 2. This will prevent inadvertent fuel assembly insertion into two adjacent storage locations. DOC LA3

states this information is being relocated to the SAR. ITS LCO 3.7.14 allows for storage in accordance with Specification 4.3.1.1, which describes the use of a checkerboard pattern. Since the LCO includes the checkerboard storage configuration by referencing ITS 4.3.1.1, ITS Bases LCO 3.4.14 should include information on how to comply with the checkerboard storage configuration. This information has been relocated to ITS Bases 3.7.14 Background but was not documented in the DOCs. Comment: Revise the ITS Bases 3.7.14 LCO to include description of how to physically comply with a checkerboard storage configuration in the LCO section. Change the designation of the change to DOC LA1.

**Response** With the incorporation of NUREG-1430 LCO 3.7.14 (See Comment 3.7-14), this LCO has been renumbered as ITS LCO 3.7.15.

- 1) Revised CTS markup page 59a to reflect the portion of CTS 3.8.16 relocated to the ITS LCO 3.7.15 Bases by 3.7DOC-LA1.
- 2) Revised 3.7DOC-LA3 to remove the relocation of CTS 3.8.16 to the SAR and revised 3.7DOC-LA1 to show the relocation of a portion of CTS 3.8.16 to the ITS LCO 3.7.15 Bases.
- 3) Revised NUREG-1430 Bases markup page B 3.7-75 to indicate the incorporation of Bases page Insert B3.7-75D.
- 4) Drafted NUREG-1430 Bases page Insert B 3.7-75D to incorporate the information relocated from CTS 3.8.16.
- 5) Revised proposed ITS Bases page B 3.7.15-2 to reflect the change in the NUREG 1430 Bases markup.

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**Comment 3.7-16**

ITS SR 3.7.14.1 Frequency  
STS SR 3.7.16.1 Frequency

ITS SR 3.7.14.1 proposes to edit the wording of the SR Frequency. The proposed wording would state "Once prior to storing the fuel assembly in Region 2." The STS SR Frequency does not include the word "once" in the frequency statement. No DOC was provided for this change. Comment: ITS SR 3.7.14.1 Frequency should be consistent with STS SR 3.7.16.1 Frequency.

**Response** With the incorporation of NUREG-1430 LCO 3.7.14 (See Comment 3.7-14), this LCO has been renumbered as ITS LCO 3.7.15.

- 1) Revised NUREG-1430 markup page 3.7-36 to restore SR 3.7.51.1 Frequency wording to standard wording by deleting "once."
  - 2) Revised proposed ITS page 3.7.15-1 to reflect the change in the NUREG-1430 markup.
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**Comment 3.7-17**

ITS 3.7.1 Actions Note  
STS 3.7.1 Actions Note  
DOC L1

ITS 3.7.1 Actions Note allows Separate Condition entry for each MSSV. The CTS markup indicated DOC L1 justified this change. DOC L1 does not contain justification for the Note.

Comment: Provide appropriate change documentation.

- Response**
- 1) Revised 3.7DOC-L1 to discuss the incorporation of the Separate Condition Entry allowance.
  - 2) Revised 3.7NSHC-L1 to evaluate the changes discussed in 3.7DOC-L1.

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**Comment 3.7-18**

CTS 3.5.1.14

CTS 3.5.1.14 provides the Main Steam Line Radiation Monitoring Instrumentation requirements. The CTS markup indicates this is being relocated to the TRM. The Summary Disposition Matrix for ANO-1 states this change was relocated to ODCM and SAR (See 3.3d DOC LA2). The reviewer was unable to determine the disposition of the change.

Comment: Provide additional information where CTS 3.5.1.14 is being relocated.

- Response** Revised CTS markup page 42b to show that the disposition of the CTS 3.5.1.14 requirements are addressed in ITS Section 3.3D, Instrumentation (Misc.).

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**Comment 3.7-19**

CTS 3.12  
DOC LA3, L11, and A10

CTS 3.12, Miscellaneous Radioactive Material Sources, was relocated to the TRM as justified by DOCs. The relocation of an entire LCO is normally done by comparison against the screening criteria and relocating the information to plant controlled documentation. Other facilities reviewed have relocated the entire LCO to plant controlled documents by comparing the specification to the screening criteria of 10 CFR 50.36.

Comment: Provide additional information why it is necessary to disposition the LCO in the manner identified in the submittal.

- Response** Relocations per 10 CFR 50.36 are supposed to be performed verbatim. This would require a change under 10 CFR 50.59 to delete the special reporting requirement and to remove duplicative requirements. Therefore, the relocation is performed in this manner to allow the deletion of the special reporting requirement and to remove the duplicative requirements prior to implementing the remaining requirements in the TRM.

- 1) Drafted 3.7DOC-LA4 to discuss the 10 CFR 50.36 criteria with respect to the relocation of these requirements.
  - 2) Revised CTS markup page 66b to reflect the incorporation of 3.7DOC-LA4.
- 

**Comment 3.7-20**

CTS Table 4.1-2, Items 5 and 10.

CTS Table 4.1-3, Items 1.f and 5.a

Justification for Specification Relocation for Table 4.1-2 (App. A, pg. 27)

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

CTS Table 4.1-2 Items 5 and 10 and Table 4.1-3 Items 1.f and 5.a, including corresponding notes, were identified as relocated specifications. The submittal provided justifications for Specification Relocation and provided adequate justification for removal from the CTS. However, only complete LCOs are allowed to be relocations. NRC Note: Items in Table 4.1-3 are also included in comments 3.4A-11 and 3.9-01 in the Section 3.4 and 3.9 comments previously submitted. 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. No changes have been made to the submittal as a result of this comment.

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**Comment 3.7-21**

CTS 4.14

DOC LA3

CTS 4.14, Radioactive Materials Sources Surveillance, was moved to the TRM and documented as a Less Restrictive - Administrative change. Movement of complete LCOs that do not meet the criteria of 10 CFR 50.36 are treated as Relocations. Comment: Provide appropriate change justification.

**Response** Relocations per 10 CFR 50.36 are supposed to be performed verbatim. This would require a change under 10 CFR 50.59 to delete the special reporting requirement and to remove duplicative requirements. Therefore, the relocation is performed in this manner to allow the deletion of the special reporting requirement and to remove the duplicative requirements prior to implementing the remaining requirements in the TRM.

- 1) Drafted 3.7DOC-LA4 to discuss the 10 CFR 50.36 criteria with respect to the relocation of these requirements.
  - 2) Revised CTS markup page 110b to reflect the incorporation of 3.7DOC-LA4.
-

**Comment 3.7-22**

ITS Bases 3.7.1 Applicability  
STS Bases 3.7.1 Applicability  
DOD 1

STS Bases 3.7.1 Applicability discusses the required number of MSSVs above and below 18% RTP. ITS Bases 3.7.1 Applicability requires MSSVs to be OPERABLE but provides no explanation that the required number varies by RTP. Comment: Include a discussion describing the required number of MSSVs.

**Response** Revised 3.7DOD-01 to provide a discussion of the deletion of this information from the ITS 3.7.1 Bases.

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**Comment 3.7-23**

ITS Bases 3.7.1 B.1 and B.2  
STS Bases 3.7.1 B.1 and B.2  
DOD 21

STS Bases 3.7.1 B.1 and B.2 require a verification by administrative means that at least [two] required MSSVs per generator are OPERABLE, with each valve from a different lift setting range. ITS Bases 3.7.1 B.1 and B.2 deleted the administrative verification. DOD 21 states the revision was to match the Specification requirements. Comment: Provide a specific justification for not including the administrative verification.

**Response** The NUREG-1430 LCO 3.7.1 Condition B (ITS 3.7.1 Condition B) Required Actions place the unit in MODE 3 in 6 hours and in MODE 4 in 12 hours in the event the Required Actions and associated Completion Time of Condition A is not met, or if one of more steam generators has less than two MSSVs OPERABLE. The Required Actions do not require a verification by administrative means that at least two MSSVs per steam generator are OPERABLE, with each valve from a different lift setting range, as stated in the Bases for Actions B.1 and B.2. Therefore, the Bases statement concerning this verification was deleted from the proposed ITS as an inconsistency between the Required Action and the associated Bases.

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**Comment 3.7-24**

ITS Bases 3.7.2 Applicable Safety Analyses  
STS Bases 3.7.2 Applicable Safety Analyses  
DOD 22

STS Bases 3.7.2 Applicable Safety Analyses provides detailed information about various steam line breaks. ITS Bases 3.7.2 Applicable Safety Analyses deleted the majority of the information in the Applicable Safety Analyses. DOD 22 only stated the changes were to be consistent with unit specific analyses and license basis. The ITS level of detail is inconsistent with the STS.



Comment: Provide information in the Applicable Safety Analysis for transients applicable to ANO1 at a level of detail consistent with the STS.

**Response** ANO personnel feel that the level of detail proposed in the ITS 3.7.2 Applicable Safety Analyses Bases is appropriate. The information that has been deleted does not, for the most part, accurately reflect the ANO-1 license basis, as presented in the ANO-1 SAR. Incorporation of a higher level of detail could result in discussions being taken out of context, and inappropriately interpreted. In addition, a higher level of detail is not felt to enhance the usability of the proposed ITS. Therefore, the proposed reduced level of detail, in conjunction with an appropriate reference to the ANO-1 SAR, is considered sufficient. No changes have been made to the submittal in response to this comment.

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**Comment 3.7-25**

ITS Bases 3.7.2 Action A.1  
STS Bases 3.7.2 Action A.1  
DOD 22

STS Bases 3.7.2 Action A.1 discusses the bases for the [8] hour completion time. ITS Bases 3.7.2 Action A.1 Bases replaced the discussion with Insert B3.7-10A and identified DOD 22 as justification. DOD 22 did not contain specific justification for modifying STS Bases 3.7.2 Action A.1. Comment: Provide justification for replacing information in STS Bases 3.7.2 Action A.1.

**Response** Revised 3.7DOD-22 to discuss the revision to the 3.7.2 Bases discussion of Action A.1.

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**Comment 3.7-26**

ITS Bases 3.7.2 Action B.1  
STS Bases 3.7.2 Action B.1  
DOD 5

The STS markup identifies a change associated with DOD 5, however DOD 5 states both "Not Used" and "The changes are consistent with the current license basis." Comment: Clarify whether DOD 5 is the justification for the change and make required changes to DOD 5.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.7-10 to delete the reference to DOD-5.  
2) Revised 3.7DOD-5 to reflect that this DOD was not used by deleting the second sentence.

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**Comment 3.7-27**  
ITS Bases 3.7.3  
STS Bases 3.7.3  
DOD 23

STS Bases 3.7.3 discusses feedwater line breaks and overfeeding conditions and the role of MFIVs in mitigating these transients. ITS deleted all discussions of feedwater line breaks and overfeeding conditions in discussing the Bases for FWIV closure.

For example, STS Bases 3.7.3 Background states “Closure of the MFIVs terminates flow to both steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs. The consequences of events occurring in the main steam lines are mitigated by their closure.” ITS Bases deleted this information. This statement appears to be valid and an appropriate background statement for the MFIVs. No specific justification was provided for information deletion.

Comment: Provide plant specific information why the deleted information concerning feedwater line breaks and overfeeding condition are not valid for Bases inclusion.

**Response** Revised 3.7DOD-23 to include a statement that FWLB and excess feedwater flow are not included in the ANO-1 safety analyses.

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**Comment 3.7-28**  
ITS Bases 3.7.5 Applicable Safety Analysis  
STS Bases 3.7.5 Applicable Safety Analysis  
DOD 25

STS Bases 3.7.5 Applicable Safety Analysis discusses that the EFW must be able to supply enough makeup to allow unit cooldown to MODE 4 and discusses the limiting Design Bases Accidents and transients. No specific justification was provided for deleting information. DOD 25 only states the changes are consistent with current licensing bases.

Comment: Provide specific justification for not including deleted information in the Applicable Safety Analysis.

**Response** ANO-1 was licensed as a safe shutdown = Hot Shutdown (subcritical with temperature  $\geq 525$  F) plant. The current license basis does not require ANO-1 to cool down to less than 525°F to reach a safe condition. With ITS conversion, the ANO-1 safe shutdown state will become MODE 3 (Hot Standby) due to the changes in MODE designations. Therefore, statements concerning requirements to cool down to MODE 4 have been deleted for consistency with the ANO-1 current license basis.

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**Comment 3.7-29**

ITS Bases 3.7.6 Applicable Safety Analysis  
STS Bases 3.7.6 Applicable Safety Analysis  
DOD 26

ITS Bases 3.7.6 Applicable Safety Analysis did not include the majority of the information from STS Bases 3.7.6 Applicable Safety Analysis. Plant specific information to replace the deleted information was not provided. DOD 26 did not provide plant specific justification for deleting the information. Comment: Provide plant specific information for the Applicable Safety Analysis Bases or provide plant specific justification for information deletion.

**Response** In a license amendment request dated January 27, 2000, ANO requested changes to the requirements associated with the QCST. This amendment request will, when approved, revise the requirements associated with the QCST to specify a contained volume sufficient for 30 minutes of EFW operation. The credited source of EFW for long term cooling is the service water system. The ITS 3.7.6 Bases were revised to reflect the expected approval of the January 27, 2000, submittal. Therefore, no additional changes are required.

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**Comment 3.7-30**

ITS 3.7.7 Bases Background  
STS 3.7.8 Bases Background

STS 3.7.8 Bases Background markup deleted "The safety related position is covered by this LCO." ITS 3.7.7 Bases Background omitted this information without providing a justification. Comment: Provide a specific justification for the omission.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.7-41 to retain the sentence, with one editorial change. The sentence now reads: "The safety related portion is covered by this LCO."  
2) Revised proposed ITS page B 3.7.7-1 to reflect the change in the NUREG-1430 Bases markup.

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**Comment 3.7-31**

ITS 3.7.7 Bases LCO  
STS 3.7.8 Bases LCO  
CTS 3.3.1 (C)  
DOC LA3

CTS 3.3.1 (C) requires two out of three service water pumps shall be operable, powered from independent essential buses, to provide redundant and independent flow paths. Information concerning the power supplies and redundant and independent flow paths is relocated to the SAR per DOC LA3. This information should be relocated to the Bases because it is necessary information for operability determination. One service water pump can be supplied from either safety related bus, therefore it is important that independent

power supply information be maintained in the Bases. Comment: Include CTS 3.3.1 (C) information in ITS 3.7.7 Bases LCO.

- Response**
- 1) Revised 3.7DOC-LA1 and 3.7DOC-LA3 to reflect that this information will be contained in the ITS 3.7.7 LCO Bases.
  - 2) Revised CTS markup page 36 to show a portion of CTS 3.3.1.C relocated to the ITS 3.7.7 LCO Bases.
  - 3) Revised NUREG-1430 Bases markup page B 3.7-42 to show the insertion of text from CTS 3.3.1.C.
  - 4) Drafted 3.7DOD-57 to discuss the incorporation of CTS 3.3.1.C information in the ITS 3.7.7 LCO Bases.
  - 5) Revised proposed ITS Bases page B 3.7.7-2 to reflect the change in the NUREG-1430 Bases markup.
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**Comment 3.7-32**  
ITS Bases 3.7.8 Applicability  
STS Bases 3.7.7 Applicability

STS Bases 3.7.7 Applicability for MODES 5 and 6 is determined by the systems it supports. ITS Bases 3.7.8 Applicability does not require the ECP to be OPERABLE in MODES 5 and 6. No specific justification was provided. ITS Bases 3.7.7 Applicability for the service water system, in MODES 5 and 6, is determined by the systems that it supports. Comment: Provide justification for not basing the Applicability of the ECP, in MODES 5 and 6, on the systems that it supports. Provide additional information why the ECP has different Applicability, in MODES 5 and 6, than the service water system.

**Response** The MODE 5 and 6 Applicability statement has been retained in the ITS. To prevent confusion about the Operability requirements in MODES 5 and 6, additional information concerning the Operability of support systems has been added. For consistency, the ITS 3.7.7 has also been revised to reflect this same statement.

- 1) Revised NUREG-1430 Bases markup pages B 3.7-43 and B 3.7-47 have been revised to retain the NUREG-1430 MODE 5 and 6 Applicability and show the insertion of additional text.
  - 2) Drafted NUREG-1430 Bases page Inserts B3.7-43A and B3.7-47C to provide clarifying information for the MODE 5 and 6 Applicability.
  - 3) Drafted 3.7DOD-59 to discuss the insertion of the additional discussions.
  - 4) Revised proposed ITS Bases pages B 3.7.7-2 and B 3.7.8-2 to reflect the change in the NUREG-1430 Bases markup.
-

**Comment 3.7-33**

ITS Bases 3.7.9 Background and Bases 3.7.10 Background  
STS Bases 3.7.10 Background and Bases 3.7.11 Background  
DOD 39 and 40

STS Bases 3.7.10 Background and 3.7.11 Background include the sentence indicating CREVS and CREACS are not emergency systems. ITS Bases 3.7.9 Background and 3.7.10 Background deleted this information and did not provide plant specific information. DOD 39 and 40 do not provide specific justification for deletion of this information. Comment: Provide plant specific information to replace STS information or provide specific justification for deletion.

- Response**
- 1) Revised NUREG-1430 Bases markup pages B 3.7-50 and B 3.7-55 to retain the deleted sentence.
  - 2) Revised proposed ITS Bases pages B 3.7.9-1 and B 3.7.10-1 to reflect the change in the NUREG Bases markups.
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**Comment 3.7-34**

ITS Bases 3.7.11 Applicable Safety Analysis  
STS Bases 3.7.12 Applicable Safety Analysis

STS Bases 3.7.12 Applicable Safety Analysis discussed the types of system failures considered in the accident analysis. ITS Bases 3.7.11 Applicable Safety Analysis did not include this information. The change was identified as an editorial change. Deletion of this information requires a plant specific justification. Comment: Provide a specific justification for deletion of the information.

- Response**
- 1) Revised 3.7DOD-41 to discussion the deletion of this information.
  - 2) Revised NUREG-1430 Bases markup page B 3.7-60 to show the deletion of the first paragraph is addressed by 3.7DOD-41.
- 

**Comment 3.7-35**

ITS Bases 3.7.4 Background  
STS Bases 3.7.17 Background  
DOD 44

STS Bases 3.7.17 Background contains information concerning the effect of a steam line break. ITS Bases 3.7.4 Background deleted this information. DOD 44 states that the change reflects unit specific design and analysis but does not provide a specific bases for the deletion. Deletion of the specific information deleted by TSTF-173 is acceptable. A plant specific justification for deleting the remaining information is required. Comment: Provide a plant specific justification for deleting the information.

- Response**
- Revised 3.7DOD-44 to provide additional details concerning the deletion of text in the NUREG-1430 Bases Applicable Safety Analyses discussion and the retention of the current license basis.

**Comment 3.7-37**

ITS Bases 3.7.4 LCO  
STS Bases 3.7.17 LCO  
DOD 44

STS Bases 3.7.17 LCO includes a discussion of why specific activity monitoring is performed and why the actions are required. ITS Bases 3.7.4 LCO deleted this information. DOD 44 states that the change reflects unit specific design and analysis but does not provide a specific justification for the deletion. A plant specific justification for the deletion is required. Comment: Provide a plant specific justification for information deletion.

- Response**
- 1) Revised NUREG-1430 Bases markup pages B 3.7-78 and B 3.7-79 to show the retention of the second paragraph of the LCO discussion.
  - 2) Revised proposed ITS Bases page B 3.7.4-2 to reflect the change in the NUREG-1430 Bases markup.
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**Comment 3.7OS-01**

The proposed TS 3.7.1, ACTION B require that "one or more steam generators with less than two MSSVs OPERABLE, the unit must be in Mode 3 in 6 hours". This requirement implies that a minimum of two OPERABLE MSSVs per steam generator (A total of four MSSVs per unit) are required for power operation with reduced power rating. Please explain the need for including the minimum power rating with one OPERABLE MSSV per steam generator in Table 3.7.1-1.

- Response**
- 1) Revised NUREG-1430 markup page 3.7-3 to remove limitations on Allowable Power Level and RPS Nuclear Overpower Trip Allowable Value for one inoperable MSSV from Table 3.7.1-1.
  - 2) Revised proposed ITS page 3.7.1-3 to reflect change in markup.
- 

**Comment 3.7OS-02**

In the proposed TS Bases, the licensee stated that In Mode 1 and 2, the MSSVs satisfy Criterion 3 of 10 CFR 50.36, while in Mode 3, the MSSVs satisfy Criterion 4 of 10 CFR 50.36. The licensee has stated in its discussion of difference from ISTS that this proposed change is consistent with the ANO-1 Licensing basis. Please substantiate this licensee's assertion.

- Response**
- The purpose of the 10 CFR 50.36 criterion statement in the Bases is to provide the criterion that requires retention of the associated specification in the ITS. The ANO-1 safety analyses were not performed assuming MODE 3 conditions. Since there are no specific MODE 3 analyses, ANO could not evaluate them against the criterion of 10 CFR 50.36. Due to this difficulty, ANO chose criterion 4 as the appropriate criterion for retention of these requirements in MODE 3. Criterion 4 states that "A structure, system, or component which operating experience or probabilistic safety assessment has

shown to be significant to public health and safety" must be retained in the ITS. Any desire to delete the requirement for MSSVs in MODE 3 would still require NRC approval. This is consistent with the ANO current license basis, since there are no specific MODE 3 analyses to be evaluated against the 10 CFR 50.36 criterion. No changes have been made to the submittal as a result of this comment.

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**Arkansas Nuclear One - Unit 1  
Improved TS Review ANO Comment Resolutions  
ITS Section 3.7: Plant Systems**

**Comment ANO-239**

Revise the ITS as necessary to reflect that Unit 1 credits only one train of CREVS for automatic actuation.

**Response**

- 1) Revised CTS markup page 60 to show incorporation of ITS 3.7.9 LCO Note 2.
- 2) Drafted 3.7DOC-A16 to discuss the incorporation of ITS 3.7.9 LCO Note 2 requiring one CREVS train to be capable of automatic actuation.
- 3) Revised NUREG-1430 markup page 3.7-23 to show incorporation of LCO Note as shown on page Insert 3.7-23A and page 3.7-25 to show the retention of the CTS 4.10.2.d.2 wording for ITS SR 3.7.9.3.
- 4) Drafted 3.7DOD-60 to discuss incorporation of LCO Note.
- 5) Revised proposed ITS pages 3.7.9-1 and 3.7.9-2 to reflect the change in the NUREG-1430 markup page.
- 6) Revised NUREG-1430 Bases markup page B 3.7-51 to show incorporation of LCO Note as shown on NUREG-1430 Bases markup page Insert B3.7-51C and page B 3.7-54 to reflect the change in ITS SR 3.7.9.3.
- 7) Revised proposed ITS Bases pages B 3.7.9-2 and B 3.7.9.3 to reflect the change in the NUREG-1430 Bases markup page.

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**Comment ANO-289**

Generic Change TSTF-284, Rev 3, "Add "Met vs. Perform" to Specification 1.4, Frequency", has been approved by the NRC. This change revises notes associated with SRs 3.7.5.3 and 3.7.5.4 to clarify when the SR must be met. Incorporate TSTF-284, Rev 3.

**Response**

- 1) Revised 3.7DOD-14 to reflect incorporation of TSTF-284, Rev. 3.
- 2) Revised NUREG-1430 Bases markup page B 3.7-30 to incorporate TSTF-284, Rev. 3 in the SR 3.7.5.3 and SR 3.7.5.4 Bases discussions.
- 3) Revised proposed ITS page B 3.7.5-6 to reflect changes in NUREG Bases markup.

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**Comment ANO-290**

Generic Change TSTF-287, Rev 5, "Ventilation System Envelope Allowed Outage Time", has been approved by the NRC. This change revises the requirements of ITS Specifications 3.7.9, "CREVS," and 3.7.11, "Penetration Room Ventilation System," to allow a 24 hour Completion Time in the event both trains of the associated ventilation system are made inoperable due to a ventilation isolation boundary inoperability. Incorporate TSTF-287, Rev 5.

**Response**

- 1) Drafted 3.7DOD-54 to discuss the incorporation of TSTF-287, Rev. 5.
- 2) Revised NUREG-1430 markup pages 3.7-23, 3.7-24, and 3.7-28 to incorporate changes per TSTF-287, Rev. 5.
- 3) Drafted NUREG-1430 markup page Insert 3.7-23 to show the LCO Note.



- 4) Revised proposed ITS pages 3.7.9-1, and 3.7.11-1 to reflect changes in NUREG markup.
  - 5) Revised CTS markup pages 60 and 66c to show incorporation of TSTF-287, Rev. 5.
  - 6) Drafted 3.7DOC-L 20, and 3.7DOC-L21 to discuss less restrictive aspects of TSTF-287, Rev. 5 incorporation.
  - 7) Drafted 3.7NSHC-L20, and 3.7NSHC-L21 to evaluate less restrictive aspects of this change.
  - 8) Revised NUREG-1430 Bases markup pages B 3.7-51, B 3.7-52, B 3.7-53, B 3.7-60, and B 3.7-61 and Bases Inserts B3.7-51C, B3.7-52A, B3.7-60B, and B3.7-61A to incorporate TSTF-287, Rev. 5.
  - 9) Revised proposed ITS pages B 3.7.9-3, B 3.7.9-4, B 3.7.11-2, and B 3.7.11-3 to reflect the changes in the Bases markup.
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**Comment ANO-292**

Generic Change TSTF-340, Rev 3, "Allow 7 day Completion Time for a turbine-driven AFW pump inoperable", has been approved by the NRC. This change revises the requirements of ITS Specification 3.7.5, "Emergency Feedwater System," to provide a 7 day Completion Time for an inoperable turbine-driven EFW pump in MODE 3 if MODE 2 has not been entered following a refueling. Incorporate TSTF-340, Rev 3.

**Response**

- 1) Created 3.7DOD-55 to discuss incorporation of TSTF-340, Rev. 3.
  - 2) Revised NUREG-1430 markup page 3.7-11 to reflect incorporation of TSTF-340, Rev. 3.
  - 3) Revised proposed ITS page 3.7.5-1 to reflect change in NUREG markup.
  - 4) Revised NUREG-1430 Bases markup page B 3.7-26 and created bases markup Inserts B3.7-26A and B3.7-26B to show incorporation of TSTF-340, Rev. 3.
  - 5) Revised proposed ITS Bases pages B 3.7.5-3 and B 3.7.5-4 to reflect change in Bases markup.
  - 6) Revised CTS markup page 40a to show incorporation of second entry Condition in 3.7.5 Condition A.
  - 7) Drafted 3.7DOC-L22 to discuss the incorporation of second entry Condition in 3.7.5 Condition A.
  - 8) Drafted 3.7NSHC-L22 to evaluate the proposed change to the CTS.
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**Comment ANO-293**

Generic Change TSTF-352, Rev 1, "Provide Consistent Completion Time to Reach MODE 4," has been approved by the NRC. This change revises the requirements of ITS Specification 3.7.6, "Q Condensate Storage Tank," to provide a 24 hour Completion Time to reach MODE 4 without reliance on steam generator for heat removal from MODE 3 in lieu of the current 18 hours. Incorporate TSTF-352, Rev 1.

**Response**

- 1) Revised NUREG-1430 page 3.7-15 to show incorporation of TSTF-352, Rev. 1 in the LCO 3.7.6 Required Action B.2 Completion Time.
- 2) Drafted 3.7DOD-56 to discuss incorporation of TSTF-352, Rev. 1.
- 3) Revised NUREG-1430 Bases page B 3.7-34 to show the incorporation of TSTF-352, Rev. 1.

- 4) Revised 3.7DOC-M7 to incorporate the change in the 3.7.6 Required Action B.2 Completion Time.
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**Comment ANO-334**

LAR dated 11/23/99 was approved as Amendment 210. Revise DOC A7 and CTS markup pages as necessary.

- Response**
- 1) Replaced CTS markup pages 66c, 66d, 66g, 66h, 109a, and 110i with amended pages.
  - 2) Revised 3.7DOC-A7 to show as not used.
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**Comment ANO-362**

DOC-A12 is no longer required since the LAR it references was approved as Amendment 205. Show DOC-A12 as not used and revise CTS markup pages 37 and 39 accordingly.

- Response**
- 1) Revised 3.7DOC-A12 to show it as not used.
  - 2) Revised CTS markup pages to delete reference to LAR and 3.7DOC-A12.
-

**Arkansas Nuclear One - Unit 1**  
**Improved TS Review NRC Comment Resolutions**  
**ITS Section 3.8: Electrical Power Systems**

**Comment 3.8.1-01**  
CTS LCO 3.0.5  
DOC A3

The licensee's proposal to modify this LCO, including deletion of the last sentence is not acceptable. The proposed changes, when coupled with proposed changes to the CTS definition of OPERABILITY, would allow plant operations in MODES 5 and 6 with only offsite power or diesel generators required OPERABLE. This is a less restrictive change which has not been justified. The licensee should provide a detailed discussion of why the change is acceptable, or retain the CTS. See also RAI 1.0-01

**Response** 3.8DOC-A3 has been revised to show that portion of 3.0.5 which indicates that it is not applicable in Cold Shutdown or Refueling has been incorporated into each of the MODE 6 electrical LCOs and Actions (NUREG-1430 LCOs 3.8.2, 3.8.5, 3.8.8, and 3.8.10).

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**Comment 3.8.1-02**  
CTS 3.7.1.A.2  
DOC LA1

The CTS describe the acceptable alignment of offsite power sources to meet LCO 3.7.1. The licensee has proposed to move this detail to the Bases as discussed in DOC LA1. However, the CTS specifically preclude powering the safety buses from the unit aux transformer when it is connected to the main generator bus. This restriction does not appear to have been retained in the proposed ITS Bases. DOC LA1 does not discuss this change. Therefore, the change is not acceptable. The licensee is requested to revise the submittal to reflect the CTS requirements, or provide a detailed explanation of why the change is acceptable. This may be a beyond scope issue.

**Response** The specific alignment of the Unit Auxiliary transformer that allows crediting it as a source of offsite power is contained in the ITS 3.8.1 Bases LCO discussion. This is considered acceptable since, in the NUREG, the details of compliance are typically maintained in the Bases instead of the LCO itself. No changes have been made to the submittal in response to this comment.

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**Comment 3.8.1-03**  
CTS 3.7.1.F and G  
DOC LA1

The CTS requirements regarding the offsite power undervoltage and protective relaying, and Transformer No. 2 load shed features are proposed to be moved to the Bases. Per DOC LA1, these requirements "provide details of the method of implementation..." and are, therefore, not pertinent to the actual requirement. The staff questions whether or not

these CTS requirements are in fact “details of the method of implementation.” In the staff’s view, these CTS requirements reflect the design of the offsite power system and are an integral part of the OPERABILITY of that system. If the proposed change is to be considered acceptable, the licensee should provide a detailed justification for the change which addressed the purpose of the instrumentation and why moving to the Bases is acceptable. Also, it appears that this change, if accepted, should be designated less restrictive instead of LA.

**Response** The requirements of CTS 3.7.1.F are the loss of power relays specified in CTS Table 3.5-1 Item 8. CTS 3.7.1.F should have been shown as addressed in Section 3.3 as the DG LOPS. CTS 3.7.1.G is related to the relays surveilled by CTS Table 4.1-1 Item 33 and are associated with proper operation of Startup Transformer # 2 load shedding. Changes to the submittal are as follows:

- 1) Revised CTS markup page 56 to show that CTS 3.7.1.F will be addressed in ITS package 3.3D.
- 2) Revised 3.8DOC-LA3 to remove reference to the relocation of CTS 3.7.1.F.
- 3) NUREG-1430 markup page Insert B3.8-20A revised to delete information related to CTS 3.7.1.F.
- 4) Revised Proposed ITS Bases page B 3.8.1-14 to reflect the change in the NUREG-1430 Bases markup.

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**Comment 3.8.1-04**  
CTS 3.7.2.H  
DOC L15, A1

This CTS requirement is proposed to be deleted. The CTS annotation indicates the justifications for this deletion are L15 and A1. A justification L15 is not provided with the CTS markup, and DOC A1 is inadequate. The licensee is requested to provide appropriate justification for this change, or retain the CTS. See also comment 3.8.1-03.

**Response** 3.8DOC-L15 was inadvertently deleted.

- 1) Provided 3.8DOC-L15 to discuss changes to CTS 3.7.2.H.
- 2) Provided 3.8NSHC-L15 to evaluated changes to CTS 3.7.2.H.
- 3) Revised CTS markup page 57 to show CTS 3.7.2.H changes are also discussed in 3.8DOC-M8.

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**Comment 3.8.1-05**  
NUREG LCO 3.8.1.a  
DOD 38

The justification for deleting the term “qualified” from the LCO is that it is not used in the Bases. This is not acceptable. Deletion of the term and associated discussion from the Bases has not been adequately justified. The NUREG should be retained.

**Response** 1) Revised 3.8DOD-38 to show it as not used.

- 2) Revised NUREG-1430 markup page 3.8-01 to show retention of 'qualified' and deleted 3.8DOD-38 from the markup.
  - 3) Revised proposed ITS page 3.8.1-1 to incorporate changes in NUREG-1430 markup.
  - 4) Revised NUREG-1430 Bases markup page to show the retention of 'qualified' and the retention of the paragraph clarifying the intent of 'qualified.'
  - 5) Revised proposed ITS Bases page B 3.8.1-3 to incorporate changes shown in the NUREG-1430 Bases markup.
- 

**Comment 3.8.1-06**  
NUREG Condition A & Condition B  
DOC 37

The periodic performance of NUREG SR 3.8.1.1 is a part of the 72 hr. Completion Time for Condition A, and should be adopted along with the extended Completion Time. If the licensee does not wish to adopt this requirement, he should retain the CTS Completion Time of 24 hours. In this case, the 10 day Completion Time associated with Required Actions A3 and B.4 would be reduced to 8 days.

**Response** 3.8DOC-L4 provides a discussion of the less restrictive aspects of the change from the CTS 3.7.2.B specified 24 hours to the ITS 3.8.1 R.A. A.3 72 hours. This includes a discussion of the capacity and capability of the remaining sources. No change is required to this discussion

- 1) Revised 3.8DOC-M4 to include discussion of the periodic verification of offsite circuit availability provided in NUREG-1430 3.8.1 R.A. A.1 and B.1 as applied to CTS 3.7.B and CTS 3.7.C
  - 2) Revised NUREG-1430 markup pages 3.8-1 and 3.8-2 to show that a periodic verification of offsite sources is retained.
  - 3) Drafted 3.8DOD-37 to discuss the change in the Frequency of this periodic verification from 8 hours to 12 hours.
  - 4) Revised proposed ITS pages 3.8.1-1 and 3.8.1-2 to incorporate changes per NUREG-1430 markup.
  - 5) Revised NUREG-1430 Bases markup pages B 3.8-5 and B 3.8-8 to show the retention of the periodic verification.
  - 6) Revised proposed ITS Bases pages B 3.8.1-5 and 3.8.1-7 to incorporate changes per NUREG-1430 markup.
- 

**Comment 3.8.1-07**  
NUREG Condition F  
DOD 1

DOD 1 states that the sequencing timers are addressed with operability of the DGs. Where is this association addressed in the ITS? The staff is unable to locate this item in the 3.8 submittal.

- Response**
- 1) Revised 3.8DOD-01 to discuss insertion of statements in 3.8.1 LCO Bases, and NUREG-1430 Bases for SRs 3.8.1.11 and 3.8.19 to clarify time delay relay operability requirements.
  - 2) Revised NUREG-1430 Bases markup pages B 3.8-4, B 3.8-24, and B 3.8-32 to show the incorporation of Inserts B3.8-4A, B3.8-24A, and B3.8-32A, respectively.
  - 3) Revised proposed ITS Bases pages B 3.8.1-4, B 3.8.14-1, and B 3.8.1-15 to incorporate changes per NUREG-1430 Bases markup.
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**Comment 3.8.1-08**  
NUREG Bases Markup  
Pg. B3.8-2 Insert B3.8-2B

What is the purpose and justification for moving a Bases discussion from the Surveillance section to the Background section?

- Response**
- 1) Revised NUREG-1430 Bases markup pages B 3.8-2 and B 3.8-15 to retain the discussion in the Surveillance section.
  - 2) Revised proposed ITS Bases to reflect change in the NUREG-1430 Bases markup.
- 

**Comment 3.8.1-09**  
NUREG Bases Markup  
Pg. B3.8-3 DOD 33

Why is this portion of the Applicable Safety Analysis being deleted? Is ANO-1 not designed to mitigate the consequences of a design basis accident coincident with a loss of all offsite or onsite power in conjunction with a worst case single failure?

- Response**
- 1) Revised 3.8DOD-33 to discuss the revision of the Applicable Safety Analysis statement instead of deletion.
  - 2) Revised NUREG-1430 Bases markup page B 3.8-3 to show revision of Applicable Safety Analysis statement.
  - 3) Revised proposed ITS Bases page B 3.8.1-3 to reflect the change in NUREG-1430 markup.
- 

**Comment 3.8.1-10**  
NUREG Bases Markup  
Pg. B3.8-3 DOD 38, 27

The term qualified and the discussion of it are deleted from the LCO Bases discussion. An adequate justification for this deletion has not been provided. The licensee should provide an adequate justification, or retain the NUREG.

**Response** See the response to Comment 3.8.1-05 for the response to this comment.

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**Comment 3.8.1-11**  
NUREG Bases Markup Insert B3.8-3A DOD 27

The proposed Bases discussion is confusing. The Insert is written such that it appears that Startup Transformer 1 can power either 4160V bus A1 or A2, but not both. The same appears to be true for the Unit Auxiliary Transformer and Startup Transformer 2. This conflicts with other material which indicates that the Unit Aux transformer is the normal source of power during plant operation with the fast transfer to Startup Transformer 1 in the event of a Unit trip. What is the design of the ANO offsite circuits, and does this insert need to be revised?

**Response** 1) Revised NUREG-1430 Bases markup page Insert B3.8-3A to clarify the operability requirements for the offsite power sources.  
2) Revised proposed ITS pages B 3.8.1-3 and B 3.8.1-4 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3.8.1-12**  
NUREG Bases Markup  
Pg. B3.8-4 DOD 15

The staff does not agree with deleting all of the Bases discussion covered by this DOD. That part of the Bases regarding the DGs starting from standby conditions should be retained.

**Response** This comment was discussed during meetings between ANO and NRC on 1/23/01 and 1/24/01. During the meetings, the reviewer agreed that sufficient information based on the ANO-1 current license basis was contained in 3.8DOD-15, and that no changes were required.

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**Comment 3.8.1-13**  
NUREG Bases Markup  
Pg. B3.8-5 DOD 17

See comments 1.0-01 and 3.8.1-01.

**Response** See the response to Comment 3.8.1-01 for the response to this comment.

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**Comment 3.8.1-14**  
NUREG Bases Markup, Action A.1 and B.1  
Pg. B3.8-5 DOD 37, DOD 27, Pg. B3.8-8 DOD 37, DOD 27.

See comments 3.8.1-06

**Response** See the response to Comment 3.8.1-06 for the response to this comment.

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**Comment 3.8.1-15**  
CTS 4.6.1.1  
DOC A9

The CTS require the DGs to be operated at “full rated load.” Full rated load is a single number and, as such, is both an upper and a lower limit. In this regard, DOC A9 is incorrect. The CTS do include an upper limit. With respect to the rest of DOC A9, it should be pointed out that the DG manufacturer has imposed a limit of 4 hours of operation at 3000 kW. If the DGs are operated at this load for a cumulative period of 4 hours, they must be disassembled and inspected. Absent this inspection, the DGs would be considered inoperable. It should also be noted that as run time is accumulated at 2850 kW or greater, the number of hours at 3000 kW before an inspection is required decreases. Considering the above, the licensee is encouraged to adopt a DG load range such as is included in the NUREG.

- Response**
- 1) Revised 3.8DOC-A9 to show that the acceptance of a load range (maximum and minimum values) for DG testing is administrative in nature.
  - 2) Revised 3.8DOD-41 to discuss the incorporation of the load range and instrument uncertainty.
  - 3) Revised NUREG-1430 markup page 3.8-7 to incorporate a maximum limit for DG load in SR 3.8.1.3, and revised SR 3.8.1.3 Note 2.
  - 4) Revised proposed ITS SR 3.8.1.3 it incorporate load range per NUREG-1430 markup.
  - 5) Revised NUREG-1430 Bases markup page Insert B3.8-18A to include the appropriate load range.
  - 6) Revised proposed ITS Bases page B 3.8.1-12 to reflect the changes in the NUREG-1430 Bases markup.

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**Comment 3.8.1-16**  
CTS 4.6.1.3  
DOC LA1

The CTS requirement to inspect the DGs every 18 months is indicated as being moved to the Bases. The staff cannot locate this item in the 3.8.1 Bases. Moreover, the staff does not consider the Bases to be the appropriate place for this requirement. This CTS item should be placed in something like the TRM.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.8-15 to delete addition of information on manufacturer recommended maintenance inspections.
  - 2) Revised proposed ITS page B 3.8.1-11 to reflect change in NUREG-1430 Bases markup.
  - 3) Revised CTS markup page 100 to show the relocation of 4.6.1.3, concerning the 18 month inspections, to the TRM.
  - 4) Revised 3.8DOC-LA1 to remove reference to CTS 4.6.1.3.
  - 5) Revised 3.8DOC-LA3 to include CTS 4.3.1.3 as relocated to the TRM.
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**Comment 3.8.1-17**  
CTS 4.6.1.4.b  
DOC L11

Independent testing of the fuel oil transfer pumps is not acceptable. The requirement to test these pumps during the monthly DG test should be retained. This is consistent with NUREG-1430.

**Response** Revised CTS markup page 100 and 3.8DOC-L11 to retain the requirement that the fuel oil transfer pumps shall be checked during the monthly DG testing.

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**Comment 3.8.1-18**  
NUREG Markup SR 3.8.1.3  
DOD 41 (two places)

See comment 3.8.1-15

**Response** See the response to Comment 3.8.1-15 for the response to this comment.

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**Comment 3.8.1-19**  
NUREG SR 3.8.1.5  
DOD 20

DOD 20 is not acceptable. This NUREG SR should be retained, or the licensee should provide an adequate justification for its deletion.

**Response**

- 1) Revised 3.8DOD-20 to delete the reference to SR 3.8.1.5. Revised 3.8DOD-06 to include changes to SR for consistency with similar changes to NUREG SRs 3.8.1.4 and 3.8.1.6.
- 2) Revised NUREG-1430 markup page 3.8-7 to show the retention of NUREG SR 3.8.1.5. The remainder of the NUREG-1430 markup for LCO 3.8.1 was revised to reflect the renumbering due to the incorporation of SR 3.8.1.5 in the ITS.
- 3) Revised proposed ITS to reflect changes in NUREG-1430 markup.
- 4) Revised NUREG-1430 Bases markup pages to reflect the incorporation of NUREG SR 3.8.1.5 and the subsequent renumbering.
- 5) Revised the proposed ITS Bases to reflect the changes in the NUREG-1430 markup.
- 6) Revised 3.8DOD-10 and 3.8-DOD-27 to reflect the renumbering of the ITS 3.8.1 surveillances.
- 7) Revised CTS markup page 56, 72, 100 to reflect the renumbering of the ITS 3.8.1 surveillances.
- 8) Revised 3.8DOC-LA1, 3.8DOC-A7 (now 3.8DOC-M19), 3.8DOC-M12, and 3.8DOC-L7 to reflect the renumbering of the ITS 3.8.1 surveillances.
- 9) Revised CTS markup page 100a to show the incorporation of NUREG SR 3.8.1.5.
- 10) Drafted 3.8DOC-M18 to discuss the incorporation of NUREG SR 3.8.1.5.

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**Comment 3.8.1-20**  
NUREG Markup SR 3.8.1.5  
No DOD

Deletion of the term "automatically" from this SR has not been justified. The term should be retained, or the licensee should provide an adequate justification for its deletion.

**Response** Due to Comment 3.8.1-19 this SR has been renumbered as SR 3.8.1.6.  
1) Revised 3.8DOD-27 to provide a discussion that automatic operation of the diesel fuel oil system is not credited.  
2) Revised NUREG-1430 markup page 3.8-7 to show 3.8DOD-27 discusses deletion of 'automatically' from SR 3.8.1.6.

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**Comment 3.8.1-21**  
NUREG Markup SR 3.8.1.6  
DOD 39

ITS LCO 3.8.1 requires two offsite circuits to be OPERABLE. DOD 39 states that ST2 is typically disabled from automatic transfer. With ST2 disabled, how can this offsite circuit be considered OPERABLE? Note that during power operation with the unit aux. Transformer being fed from the main generator, the unit aux. transformer is not an acceptable source of offsite power. This leaves only ST1 and ST2. See also SAR Section 8.3.1.1.3.

The CTS markup shows item 33 of Table 4.4-1 to be SR 3.8.1.6 in the ITS. The CTS requires this SR to be conducted during refueling shutdown. The NUREG Note corresponding to this shutdown requirement has not been adopted in the ITS. This is not acceptable. The licensee should revise the submittal to include the NUREG restriction on performing this SR in Modes 1 or 2.

**Response** Due to Comment 3.8.1-19 this SR has been renumbered as SR 3.8.1.7.

SAR Section 1.4.13 provides a discussion of how ANO-1 meets GDC 17. In this discussion, it is evident that two sources of offsite power are required to be operable. However only one of these circuits is required to be available within a few seconds following a LOCA to assure that core cooling, containment integrity, and other vital safety features are maintained. This requirement is normally satisfied by startup transformer No. 1. There is no requirement that the second offsite power source be capable of automatic transfer. Therefore, ITS SR 3.8.1.7 reflects that the selected offsite power source must be surveilled to show the ability to be automatically loaded and a manual transfer of loads to the non-selected transformer. If startup transformer No. 2 is selected for automatic transfer, then ITS SR 3.8.1.6 would require that automatic loading be verified for startup transformer No. 2. No change to the SR is required for this comment.

With respect to the Note associated with NUREG SR 3.8.1.8, ANO has retained the Note concerning when the SR may be performed. However, this Note has been revised by

TSTF-008, Rev. 2, and TSTF-283, Rev. 3. Generic change TSTF-008, Rev. 2, was included in our 1/28/00 submittal. Generic change TSTF-283, Rev. 3, is incorporated in response to discussions on this comment.

- 1) Revised 3.8DOD-07 to delete discussion of the NUREG SR 3.8.1.8 Note.
- 2) Drafted 3.8 DOD-64 to indicate incorporation of TSTF-283, Rev. 3.
- 3) Revised NUREG-1430 markup page 3.8-8 to show retention of the SR 3.8.1.8 Note, and the incorporation of TSTF-283, Rev. 3.
- 4) Revised proposed ITS page 3.8.1-5 to reflect changes to NUREG-1430 markup.
- 5) Revised NUREG-1430 Bases markup page B 3.8-20 to reflect retention of the SR Note and incorporation of TSTF-283, Rev. 3, as provided on Bases Insert B3.8-20B.
- 6) Revised proposed ITS Bases to reflect the change in NUREG-1430 markup.
- 7) Drafted 3.8DOC-L16 and 3.8NSHC-L16 to discuss the incorporation of the ITS SR 3.8.1.7 Note.
- 8) Revised CTS markup page 72 to reflect the refueling shutdown testing requirement revised as discussed in 3.8DOC-L16.

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**Comment 3.8.1-22**  
NUREG SR 3.8.1.19  
DOD 1

See comment 3.8.1-07

**Response** See the response to Comment 3.8.1-07 for the response to this comment.

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**Comment 3.8.1-23**  
NUREG SR 3.8.1.9, 3.8.1.10, 3.8.1.12, 3.8.1.14, 3.8.1.-15, 3.8.1.-16, and 3.8.1.20  
DOD 9, 10, and 15

The staff has reviewed the DODs provided as justification for not including the above NUREG SRs in the ITS. The staff concludes that the DODs are not acceptable. The licensee should include these SRs in the ITS, or provide an adequate justification for their deletion.

**Response** 3.8DOD-9, 3.8DOD-10, and 3.8DOD-15 have been revised to provide additional justification for the proposed changes.

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**Comment 3.8.1-24**  
NUREG Bases Markup SR 3.8.1.3  
Insert B3.8-18A Pg. B3.8-18

The proposed insert references RG 1.9. However, DOD 27 as applied to the discussion on Surveillance Requirements on Pg. B3.8-15 states that RG 1.9 is not applicable to SRs for ANO 1. There is an inconsistency here that must be addressed by the licensee. See also comment 3.8.1-15.

- Response**
- 1) Revised NUREG-1430 Bases markup page Insert B3.8-18A to delete the reference to RG 1.9.
  - 2) Revised proposed ITS Bases page B 3.8.1-12 to reflect the change in NUREG-1430 markup.
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**Comment 3.8.1-25**  
NUREG Bases Markup SR 3.8.1.3  
DOD 5

The justification for deleting NUREG Note 3 is not acceptable. The licensee must provide an adequate justification, or retain the NUREG requirement.

- Response**
- 1) Revised 3.8DOD-05 to show as 'Not used.'
  - 2) Revised NUREG-1430 markup page 3.8-7 to reflect the retention of NUREG Note 3.
  - 3) Revised proposed ITS page 3.8.1-4 to reflect change in NUREG-1430 markup.
  - 4) Revised NUREG-1430 Bases markup page B 3.8-18 to reflect retention of Note 3.
  - 5) Revised proposed ITS Bases page B 3.8.1-13 to reflect change in NUREG-1430 Bases markup.
  - 6) Revised 3.8DOC-A7 to show that this discussion is not used. Drafted 3.8DOC-M19 to discuss the incorporation of the SR Notes formerly addressed by 3.8DOC-A7, and to discuss the retention of NUREG SR 3.8.1.3 Note 3.
  - 7) Revised CTS markup Insert CTS100aA to show the change from 3.8DOC-A7 to 3.8DOC-M19, and to show the retention of NUREG SR 3.8.1.3 Note 3.
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**Comment 3.8.1-26**  
NUREG Bases Markup  
Pg. B 3.8-19 DOD 20

See comment 3.8.1-19

**Response** See the response to Comment 3.8.1-19 for the response to this comment.

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**Comment 3.8.1-27**  
NUREG Bases Markup  
Pg. B 3.8-19 DOD 27

See comment 3.8.1-10

**Response** See the response to Comment 3.8.1-10 for the response to this comment.

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**Comment 3.8.1-28**  
NUREG Bases Markup SR 3.8.1.6  
Pg. B3.8-20 DOD 27

The proposed Bases are not consistent with the proposed SR. Either the SR or the Bases must be changed so they address the same thing. This includes Insert B3.8-20A.

**Response** 1) Revised NUREG-1430 Bases markup page Insert B3.8-20A to provide a discussion of the automatic versus manual transfer requirements, consistent with ANO SAR Section 1.4.  
2) Revised proposed ITS Bases page B 3.8.1-14 to reflect the change in the NUREG-1430 Bases markup.

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**Comment 3.8.1-29**  
NUREG Bases Markup SR 3.8.1.7, SR 3.8.1.8  
Pg. B3.8-24, B3.8-31

In the third paragraph of this Bases discussion for SR 3.8.1.7, the licensee has proposed to include the terms "separate" and "associated". It is not clear what these terms mean, and their use has not been justified. The licensee should provide a discussion of what these terms mean and why they are acceptable, or delete them from the Bases. This is also applicable to inclusion of the term "separate" in the last paragraph of the discussion for SR 3.8.1.8.

**Response** Due to Comment 3.8.1-19 these SRs have been renumbered as SR 3.8.1.8 and 3.8.1.9.

1) Revised NUREG-1430 Bases markup pages B 3.8-24, B 3.8-31, and B 3.8-32 to delete the insertion of "separate" and "associated".  
2) Revised proposed ITS Bases pages B 3.8.1-15 and B 3.8.1-16 to reflect the change in NUREG-1430 markup.

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**Comment 3.8.1-30**  
CTS Table 4.1-1 Items 32 and 33  
DOC LA1

The staff does not agree that these CTS requirements are "details of the method of implementation" which can be moved to the Bases. These CTS requirements are an integral part of OPERABILITY and must be retained in the ITS. The submittal should be revised accordingly.

**Response** This comment was discussed during meetings between ANO and NRC on 1/23/01 and 1/24/01. During the meetings, the reviewer agreed that, based upon our discussion of the issue, no changes were required.

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**Comment 3. 8. 1-31**  
CTS 6.12.5.j  
DOC M8

The CTS refers to Specification 3.7.2.H. Specification 3.7.2.H, in turn, refers to the requirements of Specification 3.7.2.G, and includes actions to be taken if the requirements of 3.7.2.G cannot be met. DOC M8 addresses the requirements of 3.7.2.G and how the incorporation of these requirements in the ITS are more restrictive. However, Specification 3.7.2.G in the CTS is shown as being deleted. Given this, how does the licensee justify a reference to requirements that do not exist, and how can compliance with the provisions of 3.7.2.H satisfy the requirements of a Specification that does not exist as discussed in DOC M.8?

**Response** This comment was discussed during meetings between ANO and NRC on 1/23/01 and 1/24/01. During the meetings, the reviewer agreed that, based upon our discussion of the issue, no changes were required.

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**Comment 3. 8. 1-32**  
CTS 4.6.1.2.C, NUREG SR 3.8.1.15  
DOC L8

NUREG SR 3.8.1.15 is not adopted as part of the ITS. This SR involves a DG hot restart. The justification for not including this SR in the ITS is that it is not part of the CTS. However, in DOC L.8, it is recognized that the intent of CTS 4.6.1.2.C was a DG hot restart. Therefore, deletion of the NUREG SR is not acceptable. The licensee should adopt the NUREG or retain the CTS.

**Response** Revised 3.8DOC-L8 to provide more discussion on the license basis for CTS 4.6.1.2.c.

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**Comment 3. 8. 2-01**  
DOD 17

The proposed ITS do not include an LCO for AC Sources, Shutdown. This is acceptable provided the CTS definition of OPERABILITY and the provisions of CTS LCO 3.0.5 are retained in the ITS.

**Response** An LCO for AC Sources - Shutdown has been incorporated. Changes have been made as follows:

- 1) Revised CTS markup page Insert CTS 56A to indicate the addition of ITS 3.8.2.
- 2) Revised 3.8DOC-M2 to discuss the incorporation of explicit shutdown electrical specifications.
- 3) Revised NUREG-1430 and Bases markup pages to include markups of LCO 3.8.2.
- 4) Revised, or drafted, 3.8 DODs 01,12, 17, 28, 55, 58, 60, and 62 to discuss changes to NUREG-1430 LCO 3.8.2.
- 5) Drafted proposed ITS and Bases pages for ITS 3.8.2.

- 6) Revised CTS markup pages 56, 57, 57a, 57b, 57c, 100, 100a, 100b, 101, 101a, 101b, and 101c, and Insert pages CTS 56A, CTS 57A, and CTS 100a to reflect change in ITS numbering.
- 

**Comment 3.8.3-01**  
NUREG SR 3.8.3.5  
DOD 20

The justification for deleting this NUREG SR is not acceptable. The licensee should provide an adequate justification, or retain the SR in the ITS.

- Response**
- 1) Revised NUREG-1430 markup page 3.8-25 to show the retention of SR 3.8.3.5 as ITS 3.8.3.4.
  - 2) Revised proposed ITS page 3.8.3-2 to reflect the change in NUREG-1430 markup.
  - 3) Revised 3.8DOD-20 to reflect the retention of NUREG SR 3.8.3.5.
  - 4) Revised NUREG-1430 Bases markup pages B 3.8.1-41 and B 3.8-48 to show the retention of NUREG SR 3.8.3.5.
  - 5) Revised proposed ITS Bases pages B 3.8.3-1 and B 3.8.3-6 to reflect the changes in NUREG-1430 Bases markup.
  - 6) Revised CTS markup page 100a to show the incorporation of NUREG SR 3.8.3.5.
  - 7) Drafted 3.8DOC-M20 to discuss the incorporation of NUREG SR 3.8.3.5.
- 

**Comment 3.8.3-02**  
NUREG Bases Markup - LCO  
Pg. B3.8-42 DOD 29

The last paragraph of the LCO discussion is revised. The DOD (29) states that this change reflects unit specific design. However, in the Background discussion, the unit specific design is stated as having capacity for five successive start attempts. What, then, is the purpose of changing this LCO Bases discussion? It is the staff's view that the Bases should be retained as is.

- Response**
- 1) Revised NUREG-1430 Bases markup pages B 3.8-42, B 3.8-45 and B 3.8-48 to retain discussions of five start attempts for the DG air start system.
  - 2) Revised NUREG-1430 Bases markup page Insert B3.8-42B and Insert B3.8-48A to show their deletion.
  - 3) Revised proposed ITS Bases pages B 3.8.3-2, B 3.8.3-3, and B 3.8.3-5 to reflect the changes in NUREG-1430 Bases markup.
  - 4) Revised 3.8DOD-29 to delete discussions of changes in the 3.8.3 Bases Background and LCO, with respect to starting air systems, and to revise the discussion to address the deletion of bracketed information.
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**Comment 3.8.3-03**  
NUREG Bases Markup Action A.1  
Pg. B3.8-43 DOD 34

Revisions to the Action A.1 Bases are proposed with DOD 34 indicated as the justification. DOD 34 is listed as "not used." The licensee should provide an adequate justification for the change, or retain the NUREG.

**Response** 3.8DOD-34 has been provided to address the deletion of information concerning feed and bleed cleaning of the fuel oil storage tank.

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**Comment 3.8.3-04**  
NUREG Bases Markup ITS Action 0.1  
Pg. B3.8-45 DOD 29

See comment RAI 3.8.3-02 regarding changes to the 5 start criteria.

**Response** See the response to Comment 3.8.3-02 for the response to this comment.

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**Comment 3.8.3-05**  
NUREG Bases Markup ITS SR 3.8.2.3  
Pg. B3.8-48 DOD 29

See comment RAI 3.8.3-02 regarding changes to the 5 start criteria.

**Response** See the response to Comment 3.8.3-02 for the response to this comment.

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**Comment 3.8.4-01**  
CTS 3.7.3.A.1  
No DOC

This CTS requirement is proposed to be deleted. No justification has been provided. Therefore, the proposed deletion is not acceptable.

**Response** The requirements of CTS 3.7.3.A.1 are addressed in ITS Section 5.0, and have been relocated to the Safety Function Determination Program. The CTS markup associated with ITS Section 3.8 was in error and has been corrected. This comment was discussed during meetings between ANO and NRC on 1/23/01 and 1/24/01. During the meetings, the reviewer agreed that, based upon our discussion of the issue, no further changes were required.

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**Comment 3.8.4-02**  
CTS 3.7.3.A.2  
DOC L1

This CTS requirement is proposed to be deleted. DOC L1 is indicated as the justification. However, DOC L1 does not address this requirement. The licensee is requested to provide an adequate justification for this change, or retain the CTS.

**Response** 1) Revised CTS markup page 57a to show the requirements of CTS 3.7.3.A.2 are dispositioned by 3.8DOC-L17.  
2) Drafted 3.8DOC-L17 and 3.8NSHC-L17 to address the disposition of CTS 3.7.3.A.2.

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**Comment 3.8.4-03**  
ITS LCO 3.8.3, Condition A  
DOD 13

The 8 hour Completion Time for Required Action A.1 is acceptable based on the fact that this is the time allowed by the CTS. However, the CTS of 8 hours (CTS 3.7.3.A.3) is just one of a set of requirements that must be met with a DC electrical power subsystem inoperable. CTS 3.7.3.A.1 must also be complied with in order for the 8 hour time to be in effect. To retain the 8 hour time in the ITS, the requirements of CTS 3.7.3.A.1 must also be retained. The licensee should revise the submittal accordingly.

**Response** The requirements of CTS 3.7.3.A.1 are addressed in ITS Section 5.0, and have been relocated to the Safety Function Determination Program. The CTS markup associated with ITS Section 3.8 was in error and has been corrected. This comment was discussed during meetings between ANO and NRC on 1/23/01 and 1/24/01. During the meetings, the reviewer agreed that, based upon our discussion of the issue, no further changes were required.

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**Comment 3.8.4-04**  
NUREG SR 3.8.4.2, 3.8.4.3, 3.8.4.4, and 3.8.4.5  
DOD 14

The justification for not including these SRs in the ITS is not acceptable. The licensee should provide an adequate justification, or retain the NUREG SRs in the ITS.

**Response** Revised 3.8DOD-14 to include additional justification for not retaining these SRs.

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**Comment 3. 8. 4-04a**  
NUREG Bases Markup  
Pg. B3.8-51 DOD 30

The licensee's proposal to delete that portion of the NUREG Bases dealing with battery sizing is not acceptable. The justification provided is not adequate. The licensee should retain this Bases section, or provide a detailed, adequate justification for its removal.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.8-51 to show the incorporation of new Insert B3.8-51A, which provides a description of the ANO-1 battery sizing.  
2) Revised proposed ITS Bases page B 3.8.4-2 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 4-05**  
NUREG Bases Markup  
Pg. B3.8-52 DOD 33

The Bases discussion proposed for deletion addresses the worst case scenario, and is not inaccurate. This Bases section should be retained and DOD 33 deleted, unless the design of ANO 1 is such that the DC subsystems cannot continue to function assuming a loss of all offsite or all onsite power coincident with a worst case single failure.

What is the rationale behind the change in the statement that DC sources satisfy Criterion 3 of 10 CFR 50.36? The licensee should provide an adequate justification for this change, or retain the NUREG.

**Response** The ANO-1 accident analyses are not specifically performed in MODES 3 and 4. Therefore, since an evaluation of the applicable 10 CFR 50.36 criteria cannot be made for the MODE 3 and 4 requirements, Criterion 4 was determined to be applicable. The Applicable Safety Analyses has been revised to retain discussions of loss of offsite and onsite AC with a worst case single failure.

- 1) Revised 3.8DOD-33 to discuss the revision of the Applicable Safety Analysis statement instead of deletion.
  - 2) Revised NUREG-1430 Bases markup page B 3.8-52 to show revision of Applicable Safety Analysis statement.
  - 3) Revised proposed ITS Bases page B 3.8.4-2 to reflect the change in NUREG-1430 markup.
  - 4) Revised 3.8DOD-52 to provide a discussion of the ANO-1 lower MODE analyses.
-

**Comment 3.8.4-06**  
NUREG Bases Markup - LCO  
Pg. B3.8-52 DOD 30

The proposed change to the discussion of what constitutes an OPERABLE DC subsystem is not acceptable. The NUREG discussion should be retained as is.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.8-52 to retain requirement that battery charger must be connected to the bus as a condition of DC subsystem operability.  
2) Revised proposed ITS Bases page B 3.8.4-3 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3.8.4-07**  
NUREG Bases Markup  
Pg. B3.8-53 DOD 13

This Bases discussion needs to be revised. See comment 3.8.4-03.

**Response** See the response to Comment 3.8.4-03 for the response to this comment.

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**Comment 3.8.4-08**  
NUREG Bases Markup SR 3.8.3.3  
DOD 30

Deletion of that portion of the Bases dealing with "the as found condition" is not acceptable. The proposed ITS includes provisions for using a modified performance discharge test. This test, as well as the service test, are performed from the "as found condition" per IEEE-450 (1995). The Bases must reflect this requirement.

**Response** Due to Comment 3.8.2-01 this SR has been renumbered as SR 3.8.4.3.

- 1) Revised 3.8DOD-30 to discuss incorporation of "as found" testing for the modified performance discharge test in NUREG SR 3.8.4.7 and the deletion of "as found" testing in NUREG SR 3.8.4.8, with respect to performance discharge testing.
  - 2) Revised NUREG-1430 Bases markup page B 3.8-57 to incorporate SR 3.8.4.7 wording concerning "as found" with respect to modified performance discharge testing.
  - 3) Revised proposed ITS Bases page 3.8.4-5 to reflect the change in NUREG-1430 Bases markup.
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**Comment 3.8.5-01**  
STS 3.8.5

ITS omits STS 3.8.5. See comment 3.8.2-01.

**Response** An LCO for DC Sources - Shutdown has been incorporated. Changes have been made as follows:

- 1) Revised CTS markup page Insert CTS 56A to indicate the addition of ITS 3.8.5.
- 2) Revised 3.8DOC-M2 to discuss the incorporation of explicit shutdown electrical specifications.
- 3) Revised NUREG-1430 and Bases markup pages to include markups of LCO 3.8.5.
- 4) Revised, or drafted, 3.8 DODs 14, 17, 30, 55, 56, 57, 58, 59, and 62 to discuss changes to NUREG-1430 LCO 3.8.5.
- 5) Drafted proposed ITS and Bases pages for ITS 3.8.5.
- 6) Revised CTS markup pages 56, 57, 57a, 57b, 57c, 100a, 100b, 101, 101a, 101b, and 101c, and Insert pages CTS 56A, CTS 57A, and CTS 100a to reflect change in ITS numbering.

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**Comment 3.8.6-01**  
NUREG Bases Markup  
Pg. B3.8-64 DOD 33

Why is this portion of the Applicable Safety Analysis being deleted? Is ANO-1 not designed to mitigate the consequences of a design basis accident coincident with a loss of all onsite or offsite power in conjunction with a worst case single failure?

- Response**
- 1) Revised 3.8DOD-33 to discuss the change to the 3.8.6 Bases Applicable Safety Analyses discussion.
  - 2) Revised NUREG-1430 Bases markup page B 3.8-64 to reflect the change to the Applicable Safety Analyses discussion.
  - 3) Revised proposed ITS Bases page 3.8.6-1 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3.8.6-02**  
NUREG Bases Markup  
Pg. B3.8-68 DOD 30

DOD 30 does not provide a justification for deletion of portions of the Bases discussion regarding Category A and Category B limits. The licensee should provide an appropriate justification, or retain the NUREG language.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.8-68 to retain the discussion related to the specific gravity requirements of Category A and B.
  - 2) Revised proposed ITS Bases page B 3.8.6-4.
  - 3) Revised 3.8DOD-30 to discuss changes to the retained text.
-

**Comment 3.8.6-03**  
NUREG Bases Markup  
Pg. B3.8-69 DOD 30

DOD 30 does not provide a justification for deletion of a portion of the Category C Bases discussion. The licensee should provide an appropriate justification, or retain the NUREG language.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.8-69 to retain the discussion related to the specific gravity requirements of Category C.  
2) Revised proposed ITS Bases page B 3.8.6-5.  
3) Revised 3.8DOD-30 to discuss changes to the retained text.

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**Comment 3.8.7-01**  
SR 3.8.5.1  
DOD 46

The licensee has not provided an adequate justification for changing the frequency of this SR from 7 days to 31 days. The NUREG frequency of 7 days should be retained.

**Response** Due to Comments 3.8.2-01 and 3.8.5-01 this SR has been renumbered as SR 3.8.7.1.  
1) Revised NUREG-1430 markup page 3.8-37 to retain the NUREG Frequency.  
2) Revised 3.8DOD-46 to show it as not used.  
3) Revised proposed ITS page 3.8.7-2 to reflect change in NUREG markup.  
4) Revised NUREG-1430 Bases markup page B 3.8-74 to retain the 7 day Frequency.  
5) Revised proposed ITS Bases page 3.8.7-3 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3.8.7-02**  
NUREG Bases Markup  
Pg. B3.8-71 DOD 31

The licensee has proposed to revise the Bases by including Insert B3.8-71A in the Background discussion. It appears that this insert is more appropriate for inclusion in the Bases discussion of Distribution Systems-Operating since it describes an alternate method of powering the 120 VAC vital buses. To be OPERABLE, inverters must be connected to a DC source. The NUREG Bases recognizes that some inverter designs include an integral rectifier, and have a station battery as backup. An alternate AC source, such as described in the insert, is not applicable to an inverter discussion.

**Response** 1) Revised NUREG-1430 Bases page Insert B3.8-71A to delete information related to alternate power supply.  
2) Revised proposed ITS Bases page B 3.8.7-1 to reflect the change in Bases markup.

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**Comment 3. 8. 7-03**  
NUREG Bases Markup  
Pg. B.3.8-71 DOD 33

Why is this portion of the Applicable Safety Analysis being deleted? Is ANO-1 not designed to mitigate the consequences of a design basis accident coincident with a loss of all offsite or onsite power in conjunction with a worst case single failure?

**Response**

- 1) Revised NUREG-1430 Bases markup page B 3.8-71 to reflect the change to the Applicable Safety Analyses discussion.
- 2) Revised 3.8DOD-33 to discuss change in the Applicable Safety Analyses discussion.
- 3) Revised proposed ITS Bases page B 3.8.7-1 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 7-04**  
ITS SR 3.8.5.1  
NUREG Bases Markup, Pg. B3.8-72 DOD 31

In the SR and in the Bases discussion, inverter frequency has been deleted. There is no DOD associated with the SR deletion and DOD 31 in the Bases does not address the issue. The licensee is requested to provide an adequate justification for the deletion, or retain the NUREG language.

**Response**

- 1) Revised 3.8DOD-31 to remove discussion for the deletion of the frequency requirement in SR 3.8.7.1 and its associated Bases.
- 2) Revised NUREG-1430 markup page 3.8-37 to show retention of frequency requirement in SR 3.8.7.1.
- 3) Revised proposed ITS page 3.8.7-2 to reflect the change in NUREG-1430 markup.
- 4) Revised NUREG-1430 Bases markup page B 3.8-74 to reflect the retention of frequency requirement in SR 3.8.7.1.
- 5) Revised proposed ITS Bases page B 3.8.7-3 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 7-05**  
LCO 3.8.5 Note DOD 45  
NUREG Bases Markup Pg. B3.8-72 DOD 45

The proposed LCO Note and the associated Bases are proposed to be modified to allow use of a swing inverter. To assist the staff in understanding this proposal, the licensee is requested to provide a discussion of the swing inverter(s). Are the swing inverters identical to the inverters normally used? DOD 45 indicates that the switching between the inservice inverter and the swing inverter is not a frequent operation. What would be the reason for making this transfer, and how long would the swing inverter normally be in use?

**Response** The swing inverters are identical in all respects to the normally inservice inverters. These inverters are placed in service in the event one of the inverters in the associated electrical train fails. A swing inverter could be in service for an entire cycle, or longer, since it is identical to the normally inservice inverters.

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**Comment 3. 8. 7-06**  
NUREG Bases Markup  
Pg. B3.8-73 DOD 31

DOD 31 does not provide an adequate justification for the proposed changes to the first paragraph of the Bases discussion for Action A.1. The licensee should provide more information regarding how the 120 VAC vital bus can remain energized when the associated inverter is inoperable. This discussion should include the source of the power and how the proposed change related to the ANO-1 licensing basis.

**Response**

- 1) Revised NUREG-1430 Bases markup page B 3.8-73 to include more information on the automatic transfer of the associated 120 VAC vital bus to its alternate AC supply.
- 2) Revised 3.8DOD-31 to provide a discussion of the change to the NUREG-1430 Bases.
- 3) Revised proposed ITS Bases page B 3.8.7-2 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 7-07**  
NUREG Bases Markup  
Pg. B3.8-73 DOD 13

See comment 3.8.9-01 regarding 8 hours AOT for inoperable 120 VAC vital bus.

**Response** See resolution of Comment 3.8.9-01 for resolution of this comment.

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**Comment 3.8.7-08**  
NUREG Bases Markup  
Pg. B3.8-74 DOD 46

See comment 3.8.7-01 regarding seven days and 31 days for performance of the SR.

**Response** See resolution of Comment 3.8.7-01 for resolution of this comment.

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**Comment 3.8.7-09**  
NUREG Bases Markup  
Pg. B3.8-74 DOD 31

DOD 31 does not provide an adequate justification for deleting the frequency requirement from this SR. See comment 3.8.7-04.

**Response** See resolution of Comment 3.8.7-04 for resolution of this comment.

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**Comment 3.8.8-01**  
STS 3.8.8

ITS omits STS 3.8.8. See comment 3.8.2-01

**Response** An LCO for Inverters - Shutdown has been incorporated. Changes have been made as follows:

- 1) Revised CTS markup page Insert CTS 56A to indicate the addition of ITS 3.8.8.
  - 2) Revised 3.8DOC-M2 to discuss the incorporation of explicit shutdown electrical specifications.
  - 3) Revised NUREG-1430 and Bases markup pages to include markups of LCO 3.8.8.
  - 4) Revised, or drafted, 3.8 DODs 17, 31, 55, 56, 57, and 62 to discuss changes to NUREG-1430 LCO 3.8.8.
  - 5) Drafted proposed ITS and Bases pages for ITS 3.8.8.
  - 6) Revised CTS markup pages 56, 57, 57a, 57b, and 57c, and Insert pages CTS 56A and CTS 57A to reflect change in ITS numbering.
-



**Comment 3. 8. 9-01**  
LCO 3.8.6, Condition B  
DOD 13

The licensee has proposed to retain the CTS allowance of 8 hours for an inoperable AC vital bus electrical power distribution subsystem. However, the CTS allowance is only applicable if, as stated in the CTS, all the components of the OPERABLE distribution subsystem are OPERABLE. This CTS requirement is not adopted for the ITS. Therefore, the 8 hour allowance is not acceptable. The NUREG allowance of 2 hours should be retained.

**Response** Components of the electrical distribution system, inverters, and DC subsystems are considered to be support system for other systems contained in the Technical Specifications. LCO 3.0.6 requires that cross train checks to identify a loss of safety function be performed for those systems that support multiple and redundant safety systems. This cross train check verifies that the supported systems of the remaining OPERABLE support system are OPERABLE, thereby ensuring safety function is retained. If the cross train check determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. Therefore, the CTS requirement is embodied in the ITS in LCO 3.0.6 and the SFDP.

- 1) Drafted 3.8DOC-L17 and 3.8NSHC-L17 to discuss the deletion of provisions of CTS 3.7.2.D that require a cross train check.
- 2) Revised CTS markup page 57 to show a portion of CTS 3.7.2.D is dispositioned by 3.8DOC-L17.

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**Comment 3. 8. 9-02**  
LCO 3.8.6, Condition C  
DOD 13

The licensee has proposed to retain the CTS allowance of 8 hours for an inoperable DC electrical power distribution subsystem. However, the CTS allowance is only applicable, as stated in the CTS, if all the components of the OPERABLE DC distribution subsystem are OPERABLE. This CTS requirement is not adopted for the ITS. Therefore, the 8 hour allowance is not acceptable. The NUREG allowance of 2 hours should be retained.

**Response** See resolution of Comment 3.8.9-01 for resolution of this comment.

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**Comment 3. 8. 9-03**  
SR 3.8.6.1  
DOD 44

The licensee has not provided an adequate justification for changing the frequency of this SR from 7 days to 31 days. The NUREG frequency of 7 days should be retained.

**Response** Due to Comments 3.8.2-01 and 3.8.5-01, and 3.8.8-01 this SR has been renumbered as SR 3.8.9.1.

- 1) Revised NUREG-1430 markup page 3.8-41 to retain the NUREG Frequency.
- 2) Revised 3.8DOD-44 to show it as not used.
- 3) Revised proposed ITS page 3.8.9-2 to reflect change in NUREG markup.
- 4) Revised NUREG-1430 Bases markup page B 3.8-87 to retain the 7 day Frequency.
- 5) Revised proposed ITS Bases page 3.8.9-7 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 9-04**  
NUREG Bases Markup  
Pg. B3.8-79 DOD 32

In the proposed Background section of the Bases, as well as in Table B3.8.6-1, there is no requirement for 120 VAC distribution panels to be included as part of the distribution system. This is not consistent with CTS 3.7.2.0 which addresses "120V switchgear." DOD 32 does not provide an adequate justification for deleting the 120 VAC portion of the distribution system. This is not acceptable. The licensee should retain the CTS which is consistent with the NUREG.

**Response** The distribution panels referred to in the Bases for Required Action A.1 are distribution panels associated with the ES electrical subsystem. The CTS 3.7.1.B requirements define the required distribution systems as consisting of 4160 V switchgear, 480 V load centers, 480 V motor control centers, and 120 V AC distribution panels in both of the ESAS distribution systems. Amendment 176, dated February 17, 1995, included a revision to CTS 3.7.1.B that added the requirement that the 120 V AC distribution panels be Operable. Both the letter requesting the change, dated August 30, 1994, and the Safety Evaluation associated with Amendment 176 state that CTS 3.7.1.B applies to the vital 120 VAC distribution panels. Therefore, other specific distribution panels that are not classified as 120 VAC vital distribution panels are not included in the ANO-1 ITS. 3.8DOD-32 has been revised to include this discussion.

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**Comment 3. 8. 9-05**  
NUREG Bases Markup  
Pg. B3.8-79 DOD 32

That portion of the Bases which discusses the offsite circuits is proposed to be deleted. DOD 32 does not provide an adequate justification for this deletion. The licensee should provide an adequate justification, or retain a Bases discussion of the ANO-1 offsite circuits.

**Response** Due to the complexity of describing the ANO-1 vital AC electrical power subsystem, it was determined that maintaining the discussion in only one place in the Bases, with appropriate references to the discussions from other related Bases, would reduce the burden associated with maintaining the information current. Since appropriate references are provided, the operator can easily reach the desired information with no significant effort.

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**Comment 3. 8. 9-06**  
NUREG Bases Markup  
Pg. B3.8-79 DOD 32

In the 120 VAC Bases discussion, it is stated that the alternate power supply for the 120 VAC vital buses is powered from the same subsystem as the associated inverters. The staff finds this to be confusing. The inverters are powered from a 125 VDC bus, whereas the alternate power supply appears to be an AC source. The licensee is requested to address this apparent inconsistency and revise the Bases accordingly.

**Response**

- 1) Revised NUREG-1430 Bases markup page B 3.8-79 to incorporate a discussion of the 120 VAC vital distribution panels, consistent with the description provided in SAR Section 8.3.1.1.6.
- 2) Revised NUREG-1430 Bases markup pages B 3.8-81, and B 3.8-88 to retain distribution panels, consistent with the description in the Background discussion .
- 2) Revised 3.8DOD-32 to provide discussion on incorporation of the SAR description.
- 3) Revised proposed ITS Bases pages B 3.8.9-01, B 3.8.9-02, and B 3.8.9-8 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 9-07**  
NUREG Bases Markup  
Pg. B3.8-8 DOD 33

Why is this portion of the Applicable Safety Analysis being deleted? Is ANO-1 not designed to mitigate the consequences of a design basis accident coincident with a loss of all offsite or all onsite power in conjunction with a worst case single failure?

**Response** 1) Revised NUREG-1430 Bases markup page B 3.8-80 to show revision of the Applicable Safety Analyses statement.  
2) Revised 3.8DOD-33 to discuss the revision of the Applicable Safety Analyses statement.  
3) Revised proposed ITS Bases page B 3.8.9-2 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 9-08**  
NUREG Bases Markup  
Pg. B3.8-80 DOD 52

The last sentence in the Applicable Safety Analysis section of the Bases is revised to state that the distribution systems satisfy Criterion 3 of 10 CFR 50.36 in Modes 1 and 2, and satisfy Criterion 4 in Modes 3 and 4. DOD 52 does not provide an adequate justification for this change. The licensee is requested to provide a detailed discussion on why the distribution systems satisfy different Criterion in different MODES. This discussion should be expanded to address all other systems/components in the ITS which have been subjected to this change.

**Response** The ANO-1 accident analyses are not specifically performed in MODES 3 and 4. Therefore, since an evaluation of the applicable 10 CFR 50.36 criteria cannot be made for the MODE 3 and 4 requirements, Criterion 4 was determined to be applicable. Revised 3.8DOD-52 to incorporate a discussion of the ANO-1 lower MODE analyses.

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**Comment 3. 8. 9-09**  
NUREG Bases Markup  
Pg. B3.8-81 DOD 26

The CTS address distribution panels. In the ITS, however, it is proposed to delete reference to distribution panels. DOD 26 does not provide an adequate justification for this deletion. This is not acceptable. The licensee should retain distribution panels in the Bases. This is consistent with the NUREG.

**Response** The distribution panels referred to in the Bases for Required Action A.1 are distribution panels associated with the ES electrical subsystem. The CTS 3.7.1.B requirements define the required distribution systems as consisting of 4160 V switchgear, 480 V load centers, 480 V motor control centers, and 120 V AC distribution panels in both of the ESAS distribution systems. Amendment 176, dated February 17, 1995, included a revision to

CTS 3.7.1.B that added the requirement that the 120 V AC distribution panels be Operable. Both the letter requesting the change, dated August 30, 1994, and the Safety Evaluation associated with Amendment 176 state that CTS 3.7.1.B applies to the vital 120 VAC distribution panels. Therefore, other specific distribution panels that are not classified as 120 VAC vital distribution panels are not included in the ANO-1 ITS.

- 1) Revised 3.8DOD-32 to include this discussion.
- 2) Revised NUREG-1430 Bases markup pages B 3.8-81 and B 3.8-82 to refer to 3.8DOD-32 instead of 3.8DOD-26.

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**Comment 3. 8. 9-10**  
NUREG Bases Markup  
Pg. B3.8-81 DOD 17

The Bases discussion regarding distribution subsystem requirements is modified to state that subsystem requirements in MODES 5 and 6 are addressed by the definition of OPERABILITY for each required supported load. It should be noted that the staff and the licensee are not in agreement on this issue, and that changes may be required.

**Response** 1) Revised NUREG-1430 Bases markup page B 3.8-81 to reflect the incorporation of LCO 3.8.10.  
2) Revised proposed ITS page B 3.8.9-3 to reflect the change in NUREG-1430 Bases markup.

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**Comment 3. 8. 9-11**  
NUREG Bases Markup  
Pg. B3.8-82 DOD 26

See comment 3.8.9-09 regarding distribution panels.

**Response** See resolution of Comment 3.8.9-09 for resolution of this comment.

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**Comment 3. 8. 9-12**  
NUREG Bases Markup  
Pg. B3.8-83 DOD 13 (two places)

See comment 3.8.9-01 regarding maintaining the 8 hours AOT for an inoperable AC vital bus.

**Response** See resolution of Comment 3.8.9-01 for resolution of this comment.

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**Comment 3.8.9-13**  
NUREG Bases Markup  
Pg. B3.8-84 DOD 13

See comment 3.8.9-01 regarding maintaining the 8 hour AOT for an inoperable AC vital bus.

**Response** See resolution of Comment 3.8.9-01 for resolution of this comment.

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**Comment 3.8.9-14**  
NUREG Bases Markup  
Pg. B3.8-85 DOD 13

See comment 3.8.9-02 regarding maintaining the 8 hour AOT for an inoperable DC electrical power distribution subsystem.

**Response** See resolution of Comment 3.8.9-01 for resolution of this comment.

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**Comment 3.8.9-15**  
NUREG Bases Markup  
Table B3.8.6-1 DOD 32

The NUREG Table listing of 120 VAC distribution panels has been deleted from the Table. DOD 32 does not provide an adequate justification for this deletion. Moreover, 120 VAC distribution panels are required to be OPERABLE by the CTS. This proposed change is not acceptable.

**Response** 3.8DOD-32 has been revised to provide more justification for this change. See resolution of Comment 3.8.9-09 for further resolution of this comment.

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**Comment 3.8.9-16**  
NUREG Bases Markup  
Table B3.8.6-1

The footnote at the bottom of the NUREG Table is deleted. This is not acceptable. The footnote should be retained. Also, a new Note is proposed to be added. This new Note addresses swing bus 56 which is not addressed in any other part of the proposed ITS. This swing bus and how it functions should be described in the appropriate Bases, and included in the body of the ITS, if applicable.

**Response** 1) Revised NUREG-1430 Bases markup pages B 3.8-79 and B 3.8.88 to incorporate a discussion of the B56/B55 swing motor control center, and to retain the Table B 3.8.9-1 footnote. Provided NUREG-1430 Bases markup page insert B3.8-79A to show the information inserted in Bases page B 3.8-79.

- 2) Revised proposed ITS Bases pages B 3.8.9-1 and B 3.8.9-8 to reflect the change in Nureg Bases markup.
- 

**Comment 3.8.10-01**  
STS 3.8.10

ITS omits STS 3.8.10. See comment 3.8.2-01

**Response** An LCO for Distribution Systems - Shutdown has been incorporated. Changes have been made as follows:

- 1) Revised CTS markup page Insert CTS 56A to indicate the addition of ITS 3.8.10.
- 2) Revised 3.8DOC-M2 to discuss the incorporation of explicit shutdown electrical specifications.
- 3) Revised NUREG-1430 and Bases markup pages to include markups of LCO 3.8.10.
- 4) Revised, or drafted, 3.8 DODs 17, 32, 43, 55, 57, 58, 61, and 62 to discuss changes to NUREG-1430 LCO 3.8.10.
- 5) Drafted proposed ITS and Bases pages for ITS 3.8.10.

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**Arkansas Nuclear One - Unit 1  
Improved TS Review ANO Comment Resolutions  
ITS Section 3.8: Electrical Power Systems**

**Comment ANO-237**

The Bases for the 160 gallons of fuel oil in the DG day tank is incorrect. According to SAR Section 8.3.1.1.7.2, "The total capacity of one underground emergency tank plus one diesel day tank will be sufficient for not less than three and one-half days operation of one diesel generator loaded to full capacity. Thus, at least a 7 day total diesel oil inventory will be available onsite in the emergency storage tanks for operation of one diesel generator during a complete loss of electric power conditions." The proposed ITS Bases states that the volume is selected to ensure an adequate volume for a minimum of 40 minutes of operation. Revise to reflect the basis for the volume as described in the SAR.

- Response**
- 1) Revised NUREG-1430 Bases markup page B 3.8-19 to incorporate basis for minimum day tank level as discussed in the ANO-1 SAR, Section 8.3.1.1.7.2.
  - 2) Revised 3.8DOD-27 to reflect license basis for day tank level requirement.
  - 3) Revised proposed ITS Bases page B 3.8.1-13 to reflect the change in the NUREG-1430 Bases markup.
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**Comment ANO-238**

The Bases for SR 3.8.2.1 is incorrect. According to SAR Section 8.3.1.1.7.2, "The total capacity of one underground emergency tank plus one diesel day tank will be sufficient for not less than three and one-half days operation of one diesel generator loaded to full capacity. Thus, at least a 7 day total diesel oil inventory will be available onsite in the emergency storage tanks for operation of one diesel generator during a complete loss of electric power conditions." The proposed ITS Bases indicates that 20,000 gallons is necessary for 3.5 days of operation. Revise to reflect the basis for the volume as described in the SAR.

- Response** Due to the incorporation of shutdown electrical specifications, this SR is now SR 3.8.3.1.
- 1) Revised NUREG-1430 Bases markup page B 3.8-45 incorporate basis for minimum day tank level as discussed in the ANO-1 SAR, Section 8.3.1.1.7.2.
  - 2) Revised 3.8DOD-29 to reflect license basis for day tank level requirement.
  - 3) Revised proposed ITS Bases page B 3.8.3-4 to reflect the change in NUREG-1430 Bases markup.
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**Comment ANO-295**

Although the inverters are not included in the ANO CTS, administrative controls over the inverters have been established in accordance with GL 91-11. Several inverter failures since the incorporation of these administrative controls have shown that the 24 hour Completion Time is not adequate. An entire train of ESF equipment may be inoperable for 72 hours. Since one inverter affects only a portion of one train, it should be reasonable to incorporate a 72 hour Completion time for an inoperable inverter, or two inoperable



inverters in the same electrical train. Revise the ITS to allow a 72 hour Completion Time for one or more inoperable inverters in the same train.

- Response**
- 1) Drafted 3.8DOD-65 to discuss the change in LCO 3.8.7 Required Action A.1 Completion time from 24 hours to 72 hours, and the change to Condition A addressing two inoperable inverters in the same electrical distribution subsystem.
  - 2) Revised NUREG-1430 markup page 3.8-36 to show the revised Condition A and Required Action A.1 Completion Time.
  - 3) Revised proposed ITS page 3.8.7-1 to reflect the change in NUREG markup.
  - 4) Revised NUREG-1430 Bases markup page B 3.8.73 to show changes to the Required Action A.1 Bases.
  - 5) Revised proposed ITS page B 3.8.7-2 and B 3.8.7-3 to reflect the change in NUREG-1430 Bases markup.
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**Comment ANO-325**

Generic Change TSTF-204, Rev 3 has been approved by the NRC. Evaluate this change for inclusion in the ANO-1 ITS.

- Response**
- 1) Drafted 3.8DOD-56 to indicate incorporation of TSTF-204, Rev. 3.
  - 2) Revised NUREG-1430 markup pages 3.8-30 and 3.8-38 to show the incorporation of the TSTF-204, Rev 3.
  - 3) Revised Proposed ITS for LCOs 3.8.5 and 3.8.8 to incorporate the changes in the NUREG-1430 markup pages.
  - 4) Revised NUREG-1430 Bases markup pages B 3.8-60, B 3.8-61, B 3.8-75, B 3.8-76 , and B 3.8-77 to show insertion of markup page Inserts B3.8-60A, B3.8-61C, B3.8 75A and B3.8-76B and revise wording to incorporate TSTF-204, Rev 3.
  - 5) Revised proposed ITS Bases pages B 3.8.5-1, B 3.8.5-2, B 3.8.5-3, B 3.8.8-1, B 3.8.8-2, B 3.8.8-3
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**Comment ANO-363**

CTS markup pages 57, 57b, and 57c are out of date due to the incorporation of Amendment 206. Replace these CTS pages and adjust the markups as appropriate.

- Response**
- 1) Replaced CTS markup pages 57, 57b, and 57c.
  - 2) Revised 3.8DOC-L3 to correct discussions based on the incorporation of Amendment 206.
  - 3) Revised NUREG-1430 markup page 3.8-2 to show incorporation of new 3.8.1 R.A. A.3 Note concerning S/U Transformer No. 2 maintenance Completion Time extension provided on Insert 3.8-2A.
  - 4) Drafted 3.8DOD-63 to discuss the 3.8.1 R.A. A.3 Note.
  - 5) Revised proposed ITS page 3.8.1-2 to reflect change in NUREG-1430 markup.
  - 6) Revised NUREG-1430 Bases markup page B 3.8-7 to incorporate a discussion of the 3.8.1 R.A. A.3 Note provided on Insert B3.8-7A.
  - 7) Revised proposed ITS Bases page B 3.8.1-6 to incorporate a discussion of the R.A. A.3 Note.

- 8) Revised 3.8DOC-L6 and 3.8NSHC-L6 to show not used, CTS markup page  
Insert CTS57A to delete the addition of R.A. B.3.1, and NUREG-1430 markup page  
3.8-2 to reflect the incorporation of Amendment 206.
  - 9) Drafted 3.8DOC-M17 to discuss changes to CTS 3.7.2.C.
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**Comment ANO-365**

Generic Change TSTF-36, Rev. 4 has been approved by the NRC. This generic change adds a Note to LCOs 3.8.2, 3.8.5, 3.8.8, and 3.8.10 that states that LCO 3.0.3 is not applicable. Evaluate this generic change for inclusion in the ITS.

**Response**

- 1) Drafted 3.8DOD-55 to indicate incorporation of TSTF-36, Rev. 4.
  - 2) Revised NUREG-1430 markup pages 3.8-20, 3.8-30, 3.8-38, and 3.8-42 to show the incorporation of the TSTF-36, Rev 4 Actions Note.
  - 3) Revised Proposed ITS for LCOs 3.8.2, 3.8.5, 3.8.8, and 3.8.10 to incorporate the changes in the NUREG-1430 markup pages.
  - 4) Revised NUREG-1430 Bases markup pages B 3.8-38, B 3.8-61, B 3.8-76, and B 3.8-91 to show insertion of markup page Inserts B3.8-38A, B3.8-61B, B3.8-76B, and B3.8-91A which incorporate TSTF-36, Rev 4.
  - 5) Revised proposed ITS Bases Actions discussions for LCOs 3.8.2, 3.8.5, 3.8.8, and 3.8.10 to incorporate the changes in the NUREG-1430 markup pages.
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