January 18, 2001

LICENSEE: Entergy Operations, Inc.

FACILITY: Arkansas Nuclear One, Unit 1

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1 (ANO-1), MEETING SUMMARY REGARDING MEETING ON DECEMBER 18 AND 19, 2000, TO DISCUSS CONVERSION TO STANDARD TECHNICAL SPECIFICATIONS (TAC NO. MA8082)

On December 18 and 19, 2000, representatives of the Nuclear Regulatory Commission (NRC) met with Entergy Operations, Inc. (Entergy or the licensee) to discuss the conversion of the technical specifications (TSs) for ANO-1 to the format of the standard technical specifications (STS). The staff and licensee discussed questions posed by the staff regarding various sections of the proposed TSs. Enclosure 1 provides a list of the participants and the TS sections discussed.

The staff provided the licensee with preliminary questions (via e-mail) prior to the meeting. The questions are provided as Enclosure 2. The discussion of each TS section basically consisted of a review of the questions to ensure a mutual understanding of the licensee's proposal and the staff's questions. The licensee will respond to the staff's questions in future submittals. Although included in Enclosure 2, Sections 3.3 (instrumentation) and 3.7 (plant systems) were not discussed during the meeting. The participants did not complete discussions regarding Section 3.8 (electrical). Another meeting will be scheduled for early 2001 to support further discussions. Preliminary proposals by the licensee for TSs in Section 3.8 to address the control of electrical equipment during shutdown modes are provided as Enclosure 3. These preliminary TS proposals will also be discussed at the next meeting.

During the discussion of beyond-scope items, the licensee confirmed that they will revise the proposed TS on decay heat requirements to be consistent with the STS and thereby eliminate one change that had been categorized as a beyond-scope issue. The staff has stopped its review of the licensee's original proposal and has closed TAC Number MA8742.

/RA/

William D. Reckley, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-313

Enclosures: As stated (3)

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Dated: January 18, 2001

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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ATTENDANCE LIST

PUBLIC MEETING HELD ON DECEMBER 18 AND 19, 2000

Name	Organization	TS Section(s)
D. James	Entergy	n/a
C. Szabo	Entergy/Excel Services	n/a
W. Reckley	NRR/DLPM/PDIV-1	beyond-scope changes
C. Harbuck	NRR/DRIP/RTSB	3.5 (emergency core cooling system)
K. Kavanagh	NRR/DRIP/RTSB	3.4 (reactor coolant system)
T. Tjader	NRR/DRIP/RTSB	2.0 (safety limits)
		3.1 (reactivity control systems)
		3.2 (power distribution limits)
		3.9 (refueling operations)
T. Liu	NRR/DRIP/RTSB	1.0 (use and Application)
E. Tomlinson	NRR/DRIP/RTSB	3.8 (electrical)

Enclosure 1

Enclosure 2

Preliminary Questions for ANO ITS Conversion

credited in the analyses ...". Comment: The deleted phrase and DOD-5 appear to be consistent; it is not clear how the STS Bases is potentially misleading.

Licensee Response:

3.2-04 ITS Bases 3.2.3 Axial Power Imbalance Operating Limits
ITS Bases 3.2.4 QPT
CTS 3.5.4 Incore Instrumentation
DOC LA1

The CTS detail, "... at least 23 individual incore detectors shall be operable to ...", is identified as being relocated to the ITS Bases. Comment: Where in the Bases is this specific information?

Licensee Response:

3.2-05 ITS 3.2.4 QPT
STS 3.2.4 QPT
DOD-17

Conditional Completion Times of "10 hours after last performance of SR 3.2.5.1" are added in the ITS to Required Actions that have a Completion Time of 10 hours. The justification for these additions is that SR 3.2.5.1 may be performed over an extended period of time. Comment: Required Action A.1.1 is to perform SR 3.2.5.1 once per two hours. How much longer than 2 hours can it take to perform SR 3.5.2.1 and why? Are the added conditional Completion Times necessary?

Licensee Response:

Specification–Issue Cross–Reference

Section	Specification	Issues
3.3A	ITS 3.3.1, Reactor Protection System (RPS)	1, 2, 3, 4, 5
3.3A	ITS 3.3.2, RPS Manual Reactor Trip	None
3.3A	ITS 3.3.3, RPS Reactor Trip Module	None
3.3A	ITS 3.3.4, Control Rod Drive (CRD) Trip Devices	None
3.3B	ITS 3.3.5, Engineered Safety Features Actuation System (ESFAS)	1, 2, 12
3.3B	ITS 3.3.6, ESFAS Manual Initiation	None
3.3B	ITS 3.3.7, ESFAS Automatic Actuation Logic	None
3.3D	ITS 3.3.8, Emergency DG Loss of Power Start (LOPS)	6, 7
3.3A	ITS 3.3.9, Source Range Neutron Flux	3, 8
3.3A	ITS 3.3.10, Intermediate Range Neutron Flux	3, 8
3.3C	ITS 3.3.11, Emergency Feedwater Initiation and Control (EFIC)	2, 6, 8, 10
3.3C	ITS 3.3.12, EFIC Manual Initiation	9
3.3C	ITS 3.3.13, EFIC Logic	11
3.3C	ITS 3.3.14, EFIC - EFW - Vector Valve Logic	11
3.3D	STS 3.3.15, Reactor Building Purge Isolation - High Radiation	Not adopted
3.3D	ITS 3.3.15, Post Accident Monitoring (PAM) (STS 3.3 17)	4
3.3D	ITS 3.3.16, Control Room Isolation - High Radiation	12
3.3D	STS 3.3.18, Remote Shutdown System	Not adopted

Issue 1: Lack of plant-specific methodology to convert trip set points to allowable values.
Comments: 3.3.1-01 and 3.3.5-01

3.3.1-01 Section 3.3A DOC A1and 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.

Entergy Response:

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.

Entergy Response:

Issue 2: Applicability requirements for the automatic bypass removal function. Comments 3.3.1-02, 3.3.5-02, and 3.3.11-01

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.

Entergy Response:

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.

Entergy Response:

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).

(4) Condition E should be referenced for Functions 1.a and 1.d.

(5) This change also affects ITS 3.3.12, 3.3.13, and 3.3.14. For these specifications, the STS applicability requirement should be adopted. (The reasons given in DOD 11 for the Applicability differences from the STS are not plant specific, and if acceptable, should be made on a generic basis using the TSTF process.) ITS 3.3.12 Action D and ITS 3.3.13 Action C should be deleted. ITS Required Action B.2 should require placing the reactor in Mode 4 consistent with the STS requirement.

Entergy Response:

Issue 3: Insufficient technical justification for requiring Operability of less than the total number of channels in the design.
Comments 3.3.1-03, 3.3.9-01, and 3.3.10-01

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 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.

Entergy Response:

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.

Entergy Response:

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.

Entergy Response:

Issue 4: Acceptable changes that need additional justification.
Comments 3.3.1-04 and 05; 3.3.15-01, 02, and 03

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.

Entergy Response:

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.

Entergy Response:

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.

Entergy Response:

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.

Entergy Response:

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.

Entergy Response:

Issue 5: Elimination of requirements to calibrate neutron detector channels at low power. Comments 3.3.1-06 and 07

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 reponses 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.

Entergy Response:

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.

Entergy Response:

Issue 6: Analog trip functions for which no trip setting is specified, or for which trip setpoints are specified instead of allowable values.
Comments 3.3.8-01 and 3.3.11-03

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.

Entergy Response:

3.3.11-03 Section 3.3C DOD 7
CTS 3.5.1
ITS 3.3.1, Table 3.3.1-1

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.

Entergy Response:

Issue 7: Allowing a loss of function condition for an indefinite time period.
Comment 3.3.8-01

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 <u>two</u> Operable degraded voltage channels per <u>bus</u> 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.

Entergy Response:

Issue 8: Inadequately justified changes in Applicability requirements.
Comments 3.3.9-02, 3.3.10-02, and 3.3.11-02

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 that 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.

Entergy Response:

3.3.10-02 Section 3.3A DOC L10
CTS 3.5.1, Table 3.5.1-1, Function3, 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 that 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.

Entergy Response:

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.

Entergy Response:

Issue 9: Failure to specify an appropriate surveillance requirement.
Comment 3.3.11-04

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.

Entergy Response:

Issue 10: Required actions that would appear to cause a plant trip.
Comment 3.3.12-01

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.

Entergy Response:

Issue 11: Less-restrictive allowed conditions that have not been justified.
Comments 3.3.13-01 and 3.3.14-01

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.

Entergy Response:

3.3.14-01 Section 3.3C DOC M8
CTS 3.5.1, Table 3.5.1-1, EFIC Columns 4 and 5
ITS 3.3.13 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 3.3.14 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.

Entergy Response:

Issue 12: Requirements that should be moved to the Bases or other licensee controlled documents.
Comments 3.3.5-03 and 3.3.16-01

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 spay 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.

Entergy Response:

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.

Entergy Response:

3.4A-01 ITS LCO 3.4.1
STS LCO 3.4.1 a. and b.
DOD 1, M10

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

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

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

Licensee Response:

3.4A-02 ITS LCO 3.4.1
STS LCO 3.4.1 a. and b.
DOD 1

DOD 1 states that ITS LCO 3.4.1 and 3.4.4 are revised to allow two pump operation (one pump in each loop) consistent with CTS 3.1.1.1.A. CTS 3.1.1.1.A states "operation with one Reactor Coolant Pump operating in each loop is limited to 24 hours with the reactor critical." ITS LCO 3.4.1 does not discuss the number of pumps in operation. Comment: Provide clarification as to how ITS LCO 3.4.1 was revised to allow two pump operation consistent with CTS 3.1.1.1.A.

Licensee Response:

3.4A-03 ITS 3.4.1 LCO Note
ITS Bases 3.4.1 LCO
STS 3.4.1 Applicability Note
STS Bases 3.4.1 Applicability
DOD 2

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

ANO1 rephrased ITS 3.4.1 Applicability Note from STS 3.4.1 Applicability. The changes are facility preferences but do not have a plant specific design Bases for inclusion. The only change that is necessary due to a plant specific difference is replacing "ramps" with "change."

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

Licensee Response:

3.4A-04 ITS SR 3.4.1.1 Note 2
ITS Bases SR 3.4.1.1 Note 2
STS SR 3.4.1.1
DOD 9

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

Licensee Response:

3.4A-05 ITS SR 3.4.1.4
STS SR 3.4.1.4
DOD 3

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

Licensee Response:

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

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

Licensee Response:

3.4A-07 ITS LCO 3.4.2 and LCO 3.4.3
STS LCO 3.4.2
CTS 3.1.3.1, 3.1.3.2, 3.1.3.7
DOC A16, L5

CTS 3.1.3.1 and 3.1.3.2 specify the Minimum Temperature for Criticality. ITS 3.4.2 contains the Minimum Temperature for Criticality limits. ITS 3.4.3 contains the limits for

Minimum Temperature for Criticality during physics testing. All requirements for Minimum Temperature for Criticality should be contained in ITS 3.4.2.

CTS 3.1.3.7 restoring temperature within CTS 3.1.32 limits within 15 minutes or be in Hot Shutdown within the next 15 minutes. ITS 3.4.3 Condition A requires that if the LCO is not met then within 30 minutes the parameter must be restored to within limits. ITS 3.4.3 allows up to 6 hours to be in MODE 3 if the temperature could not be restored to within the Minimum Temperature for Criticality limit within 30 minutes. The ITS allows a longer period to be in MODE 3 than CTS allows to be in Hot Standby.

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

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

Licensee Response:

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

STS LCO 3.4.1 contains thermal power limit for three RCPs operating. ITS LCO indicates that the specific limit will be placed in the COLR. DOD 1 stated that the thermal power limits "are currently controlled administratively, and since they are subject to change with fuel design changes, are proposed to be controlled in the COLR."

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

Licensee Response:

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

STS LCO 3.4.5 Note states that all reactor coolant pumps may be de-energized for $\leq$ 8 hours per 24 hour period for the transition to or from the Decay Heat Removal System, and all RCPs may be de-energized for $\leq$ 1 hour per 8 hour period for any other reason. CTS 3.1.1.6 Note * states that all RCPs may be de-energized for up to 1 hour. ITS 3.4.5 Note removes all the time limitations. The ITS 3.4.5 Note is not consistent with STS 3.4.5 Note or CTS 3.1.1.6 Note *.

DOD 8 states that this change is consistent with the current license basis and "that sufficient heat removal can normally be accomplished without a pump operating, via natural circulation." However, DOD 23 removes most of the references to natural circulation in the Bases 3.4.5. Comment: Provide justification for removing all time limitations in ITS LCO 3.4.5 Note and show how this change is consistent with the current license basis.

Licensee Response:

3.4A-10 ITS LCO 3.4.5 Note b
ITS Bases LCO 3.4.5
STS LCO 3.4.5 Note b
CTS 3.1.1.6 Note *
DOD 17

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

Licensee Response:

3.4A-11 ITS 3.4.7 Action A
STS 3.4.7 Action A and B
DOD 14
TSTF-263, Rev. 3

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

Licensee Response:

3.4A-12 ITS LCO 3.4.7
STS LCO 3.4.7
CTS 3.1.1.6
DOC M4
DOD 18

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

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

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

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

Licensee Response:

3.4A-13 ITS 3.4.8
STS 3.4.8
CTS 3.1.1.6
DOC L2, DOD 15

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

Licensee Response:

3.4A-14 CTS 3.1.2.4, 3.1.2.5, 3.4.3 Bases and References, Table 4.1-3 Items 1.f, 5.a and corresponding notes.
Justification for Specification Relocation for Table 4.1-3 (App. A, pg 27)
Justification for Specification Relocation for 3.1.2.4 (App. A, pg 1)
Justification for Specification Relocation for 3.1.2.5 (App. A, pg 3)

CTS 3.1.2.4, 3.1.2.5, 3.4.3 Bases and References, Table 4.1-3 Items 1.f, 5.a and corresponding notes were identified as relocated specifications. ANO1 provided justifications for Specification Relocation and provided adequate justification for removal from the CTS.

However, only removing complete LCOs are allowed to be relocations. Comment: Provide correct classification for the change.

Licensee Response:

3.4A-15 DOD 10

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

Licensee Response:

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

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

Licensee Response:

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

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

Licensee Response:

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

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

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

Licensee Response:

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

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

Licensee Response:

3.4A-20 ITS Bases 3.4.4 Safety Analyses
DOD 21

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

Licensee Response:

3.4B-01 ITS LCO 3.4.9.a
STS LCO 3.4.9.a
CTS 3.1.3.4
DOD 21

STS LCO 3.4.9.a requires pressurizer level be $\leq$ [290] inches. ITS LCO 3.4.9.a requires pressurizer level be within limits. DOD 21 indicates the limits are identified in SR 3.4.9.1. CTS 3.1.3.4 specifically lists the limits. The actual limits should be maintained in the LCO. Comment: Include the specific required values for pressurizer level in the LCO statement.

Licensee Response:

3.4B-02 ITS 3.4.10 Note 1
ITS Bases 3.4.10
STS 3.4.10
CTS 3.3.1.3
DOD 3, 35

ITS 3.4.10 Note 1 added the requirement that only one pressurizer safety valve is required to be operable in MODE 3 and MODE 4 with RCS temperature > 262 °F. It also added specific

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

Licensee Response:

3.4B-03 ITS SR 3.4.10.1 Note
STS SR 3.4.10
DOD 4

ITS SR 3.4.10.1 adds a Note that indicates that the lift settings are not required to be within limits until 36 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup. This information is already contained in LCO 3.4.10 Note. Comment: Delete the note.

Licensee Response:

3.4B-04 ITS Basis 3.4.11 Applicable Safety Analysis - Insert B3.4-59A
STS 3.4.12 Action A
STS Bases 3.4.12 Action A.1 and B.1
DOD 6

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

Licensee Response:

3.4B-05 ITS LCO 3.4.11
ITS Bases LCO 3.4.11
STS LCO 3.4.12
STS 3.4.12 Applicability Note
CTS 3.1.2.11
DOD 6

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

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

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

Licensee Response:

3.4B-06 ITS 3.4.11 Required Action C and D
STS 3.4.11 Required Action G and H
STS Bases 3.4.11 Required Action G.1, H.1 and H.2
DOD 6

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

Licensee Response:

3.4B-07 ITS 3.4.11 Action E
STS 3.4.12 Action C and D
STS 3.4.12 Bases Required Actions C.1, D.1 and D.2
DOD 6

STS 3.4.12 Action C requires that an unisolated CFT, which is pressurized to ≥ the maximum RCS pressure allowed in the PTLR, be isolated within one hour. STS 3.4.12 Action D requires that if Action C cannot be completed within the Completion Time then specific actions are required to be performed. ITS 3.4.11 Action E requires that if the LCO cannot be met for conditions other than Actions A through E then immediately initiate action to restore compliance

with the LCO. ITS does not provide a time limit on isolating the CFT or any actions if compliance with the LCO cannot be restored. Comment: Include a time limit for isolating a pressurized CFT and required actions if the CFT cannot isolated within required Completion Time.

Licensee Response:

3.4B-08 ITS 3.4.11 Action E
STS 3.4.12 Action I
DOD 6

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

Licensee Response:

3.4B-09 ITS SR 3.4.11.5, SR 3.4.11.6
STS 1.4, Example 1.4-3.
DOD 6

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

Licensee Response:

3.4B-10 ITS SR 3.4.11.1, SR 3.4.11.2, and SR 3.4.11.3
DOD 6

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

Licensee Response:

3.4B-11 ITS SR 3.4.11.5

STS SR 3.4.12.7, 1.1
DOD 6

STS SR 3.4.12.7 requires a CHANNEL FUNCTIONAL TEST be performed for each PORV. ITS SR 3.4.11.5 requires a functional test of each ERV be performed. "Functional test" is not defined by the STS or ITS. Comment: Revise ITS SR 3.4.11.5 to use STS defined terminology for the test.

Licensee Response:

3.4B-12 ITS SR 3.4.11.5 and SR 3.4.11.6
CTS Table 4.1-1 Item 60
DOC LA2

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

Licensee Response:

3.4B-13 ITS SR 3.4.12.1, 3.4.12.2 and 3.4.12.3
STS SR 3.4.16.1, 3.4.16.2 and 3.4.16.3
CTS Table 4.1-3 Item 1.b, 1.c and 1.g
DOC L11

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

Licensee Response:

3.4B-14 ITS SR 3.4.12.1, 3.4.12.2 and 3.4.12.3
STS SR 3.4.16.1, 3.4.16.2 and 3.4.16.3
CTS Table 4.1-3 Item 1.b, 1.c and 1.g. Notes (1), (2), (3), (6)
DOC L11

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

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

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

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

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

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

Licensee Response:

3.4B-15 ITS Bases 3.4.12
CTS Table 4.1-3 Note (2)
DOC LA1

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

Licensee Response:

3.4B-16 ITS SR 3.4.12.1
ITS Bases SR 3.4.12.1
STS SR 3.4.16.1
STS Bases SR 3.4.16.1
CTS Table 4.1-3 Item 1.b

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

Licensee Response:

3.4B-17 ITS 3.4.14 Applicability
STS 3.4.14 Applicability
DOD 20

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

Licensee Response:

3.4B-18 ITS 3.4.14 Action A
STS 3.4.14 Action A Note
DOD 13

STS 3.4.14 Action A Note mandates each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.14.1 and be on the RCS pressure boundary [or the high pressure portion of the system]. ITS 3.4.14 Action A did not retain the Note. DOD 13 justified the change because the MOVs that are used for isolation are not leak tested in accordance with SR 3.4.14.1 however the check valves used for isolation are leak testing. The Note should be revised to reflect that only the check valves used for isolation are required to meet SR 3.4.14.4. Comment: Modify STS 3.4.14 Action A Note to reflect only the check valves are required to meet SR 3.4.14.1 and retain in ITS 3.4.14 Action A.

Licensee Response:

3.4B-19 ITS LCO 3.4.11, Required Action A, SR 3.4.11.1
ITS Bases 3.4.11
DOD 6

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

Licensee Response:

3.4B-20 ITS Bases SR 3.4.12.1, SR 3.4.12.3, References
STS Bases SR 3.4.16.1, SR 3.4.16.3
DOD 7

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

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

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

Licensee Response:

3.4B-21 ITS Bases Applicability 3.4.13
STS Bases Applicability 3.4.13

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

Licensee Response:

3.4B-22 ITS SR 3.4.14.3 Bases
STS SR 3.4.14.3 Bases
CTS 3.5.1.7
DOC LA1
DOD 16 and 24

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

Licensee Response:

3.4B-23 CTS 3.1.1.3.B

DOC L15

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

Licensee Response:

3.4B-24 ITS Bases 3.4.13, 1.1
CTS 3.1.6.3.a
DOC LA1 (Bases)

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

Licensee Response:

3.4B-25 CTS 3.1.6.1, 3.1.6.6
DOC L19, L14, M13, A4

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

Licensee Response:

3.4B-26 ITS SR 3.4.14.1
STS SR 3.4.14.1
CTS Table 3.1.6.8
DOC L5

CTS Table 3.1.6.8 Footnote [(a)]1 Limits leakage rates to $\leq$ 1.0 gpm and Footnote [(a)]2 and [(a)]3 allow leakage rates between 1 gpm and 5 gpm provided specific criteria are met. The maximum allowable leakage rate of 5.0 gpm is specified in Footnote [(a)]4 which is the only leakage rate is being retained in ITS SR 3.4.14.1. DOC L5 states that the information in Footnote [(a)]1, [(a)]2, and [(a)]3 is being omitted in the ITS. DOC L5 states this information is important to consider for determination of maintenance and corrective actions. DOC L5 did not

indicate if this information was being retained in plant documentation. Comment: Provide additional information if the requirements are being retained in plant documentation.

Licensee Response:

3.4B-27 CTS Bases 3.1.1
CTS 3.5.1.4
CTS Table 4.1-2 Items 5 and 10
CTS Table 4.1-3 Items 1.f, 5.a and Notes 5, 7 and 10
DOC R
Justification for Specification Relocation for 3.1.5.4 (App. A, pg 5)
Justification for Specification Relocation for 4.1-2.5 and 4.1.2.10 (App. A, pg 25)
Justification for Specification Relocation for 4.1-3.1.f and 4.1.3.5.a (App. A, pg 27)

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

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

Comment: Provide correct classification for the changes.

Licensee Response:

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

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

Licensee Response:

3.4B-29 CTS 4.27
DOC L8

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

Licensee Response:

3.4B-30 CTS 4.27
DOC M13

The marked up CTS 4.27 adds SR 3.4.73 with note and SR 3.4.8.2 with note. This is identified by DOC M13. However, DOC M13 does not discuss the addition of these two surveillance requirements. Comments: Provided justification for the addition of SR 3.4.7.3 with note and SR 3.4.8.2 with note.

Licensee Response:

3.5.1-1 CTS 3.3.6
DOC M2
ITS 3.5.1, LCO Actions, Condition B
JFD 1

ITS 3.5.1, Condition B, Completion Time is proposed to be changed from 1 hour to 6 hours. Comment: This change is not acceptable without an approved traveler. Either submit a traveler for this change or leave the Completion Time as it is in STS.

Licensee Response:

3.5.2-1 CTS 3.3.6
DOC M16 and L8
ITS 3.5.2, LCO Actions, Condition B
JFD 5

Condition B is proposed to be modified by adding a second entry condition which states, "One or more trains inoperable with <100% of the ECCS flow equivalent to a single OPERABLE ECCS train available." The corresponding Required Action B.2 is proposed to be modified by deleting "Be in MODE 4" and replacing with "Reduce RCS temperature to ≤350°F." These changes are not acceptable without an approved traveler. Comment: Either submit a traveler for these changes or leave the Condition and the Required Action as they are in STS.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

3.7-03 STS 3.7.4 Entire Specification
DOD 11

STS 3.7.4 provides the technical specification for the atmospheric dump valves (ADVs). 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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 3.7.53 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.

Licensee Response:

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."

Licensee Response:

3.7-8 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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 ≥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.

Licensee Response:

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 ≥ 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 ± 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.

Licensee Response:

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 ≤84°F D.B. SR 3.7.10.1 also verifies control room air temperature is maintained ≤ 84°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.

Licensee Response:

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.

Licensee Response:

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 3.4.14 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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 or mitigated by their closure." ITS Bases deleted this information. This statement is 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

STS 3.8.1 AC Sources - Operating

3.8.1-01 CTS LCO 3.0.5
DOC A3

Forwarded to licensee by previous correspondence.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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?

Licensee Response:

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?

Licensee Response:

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.

Licensee Response:

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?

Licensee Response:

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.

Licensee Response:

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

See comments 1.0-01 and 3.8.1-01.

Licensee Response:

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

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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

See comment 3.8.1-15

Licensee Response:

3.8.1-19 NUREG SR 3.8.15
DOD 20

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

Licensee Response:

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.

Licensee Response:

3.8.1-21 NUREG Markup SR 3.8.16
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. t ransformer 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.

Licensee Response:

3.8.1-22 NUREG SR 3.8.1.19
DOD 1

See comment 3.8.1-07

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

3.8.1-26 NUREG Bases Markup
Pg. B 3.8-19 DOD 20

See comment 3.8.1-19

Licensee Response:

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

See comment 3.8.1-10

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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?

Licensee Response:

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 9.6.1.2.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.

Licensee Response:

STS 3.8.2 AC Sources - Shutdown

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.

Licensee Response:

STS 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air (Rev 0 ITS 3.8.2)

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

STS 3.8.4 DC Sources - Operating (Rev 0 ITS 3.8.3)

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

3.8.4-04 NUREG SR 3.8.4.2, 3.8.4.3, 3.8.4.4and 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.

Licensee Response:

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.

Licensee Response:

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 rational 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

STS 3.8.5 DC Sources - Shutdown

3.8.5-01 STS 3.8.5

ITS omits STS 3.8.5. See comment 3.8.2-01.

Licensee Response:

STS 3.8.6 Battery Cell Parameters (Rev 0 ITS 3.8.4)

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?

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

STS 3.8.7 Inverters - Operating (Rev 0 ITS 3.8.5)

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.

Licensee Response:

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.

Licensee Response:

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?

Licensee Response:

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.

Licensee Response:

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?

Licensee Response:

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.

Licensee Response:

3.8.7-07 NUREG Bases Markup
Pg. B3.8-73 DOD 13

See comment 3.8.6-01 regarding 8 hours AOT for inoperable 120 Vac vital bus.

Licensee Response:

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.

Licensee Response:

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 3.8.5-04.

Licensee Response:

STS 3.8.8 Inverters - Shutdown

3.8.8-01 STS 3.8.8

ITS omits STS 3.8.8. See comment 3.8.2-01

Licensee Response:

STS 3.8.9 Distribution Systems - Operating (Rev 0 ITS 3.8.6)

3.8.9-1 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.

Licensee Response:

3.8.9-2 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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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 125VDC 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.

Licensee Response:

3.8.7-07 NUREG Bases Markup
Pg. B3.8-80 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?

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

3.8.9-11 NUREG Bases Markup
Pg. B3.8-82 DOD 26

See comment 3.8.9-09 regarding distribution panels.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

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.

Licensee Response:

STS 3.8.10 Distribution Systems - Shutdown

3.8.10-01 STS 3.8.10

ITS omits STS 3.8.10. See comment 3.8.2-01

Licensee Response:

3.9-01 ITS LCO 3.9.1
STS LCO 3.9.1.a

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

Licensee Response:

3.9-02 ITS 3.9.3 Reactor Building Penetrations
ITS Bases 3.9.3 LCO Section
STS 3.9.3 Containment Penetrations
CTS 3.8.7
DOC L1
DOD-1, DOD-3 and DOD-20

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

(1) Why are fluid system escape paths not covered by the ITS, the STS Bases refer to "potential escape paths" and not just "direct paths" as referred to by the ITS;

(2) Why are single failures not considered in the safety analysis;

(3) Why are reactor building purge isolation valves not included in the LCO statement;

1.0-4 In the SR 3.9.3.2 why are reactor building isolation valves and reactor building purge isolation valves not included (the note is not adequately addressed in Bases)?

Licensee Response:

3.9-03 ITS 3.9.3 Reactor Building Penetrations
STS 3.9.3 Containment Penetrations
ITS 3.9.6 Refueling Canal Water Level
STS 3.9.6 Refueling Canal Water Level
CTS 3.8.6
DOD-15

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

Licensee Response:

3.9-04 ITS SR 3.9.3.3
STS Bases SR 3.9.3.2
STS SR 3.3.15.1, 3.3.15.2, and 3.3.15.3
DOD-3

ITS SR 3.9.3.3 was added to perform a Channel Calibration of reactor building purge exhaust radiation monitor. STS LCO 3.3.15, "RB Purge Isolation-High Radiation" was not adopted in the ITS. STS SR 3.3.15.1 and STS 3.3.15.2 require a Channel Check and a Channel Function Test respectively. ITS Section 3.9.3 did not include Surveillances to perform Channel Checks and Channel Functional Tests. STS Bases SR 3.9.3.2 discuss testing performed in STS LCO 3.3.15 indicating the necessity of testing RB Purge Isolation instrumentation. Comment: Provide information why Surveillances to perform Channel Checks and Channel Functional Tests are not included in ITS 3.9.3; why isn't STS LCO 3.3.15 being adopted?

Licensee Response:

3.9-05 ITS Bases SR 3.9.3.1
STS Bases SR 3.9.3.1
DOD-3

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

Licensee Response:

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

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

Licensee Response:

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

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

Licensee Response:

Enclosure 3

Preliminary Entergy Proposal for ITS Conversion

Shutdown Electrical TSs

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"; and

b. One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. No required offsite circuit OPERABLE.	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

(continued)

A. (continued)	A.2.4	Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. No required DG OPERABLE.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of irradiated fuel assemblies.	Immediately
	AND		
	B.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND		
	B.4	Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.2.1	Verify correct breaker alignment and indicated power availability for each required offsite circuit.	7 days
SR 3.8.2.2	----------NOTES---------- -- 1. Performance of SR 3.8.1.2 also satisfies this SR for the emergency DGs. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. ---------- -- Verify the required DG starts from standby conditions and achieves "ready-to-load" conditions.	31 days
SR 3.8.2.3	----------NOTE---------- - Performance of SR 3.8.1.5 also satisfies this SR for the emergency DGs. ---------- -- Verify the required fuel oil transfer system operates to transfer fuel oil from the storage tanks to the required DG fuel oil day tank.	31 days

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources - Shutdown

BASES

BACKGROUND

The unit shutdown Electrical Power Distribution System AC sources consist of the offsite power sources (preferred power sources, normal and alternates) and the onsite standby power sources (emergency diesel generators (DGs) and the Alternate AC (AAC) DG).

Offsite power is supplied to the unit switchyard from the transmission network by five transmission lines. From the switchyard, two electrically and physically separated offsite circuits provide AC power, through either the startup transformers or the unit auxiliary transformer, to the 4.16 kV ES buses. ES buses A3 and A4 may be cross-tied during operation in shutdown conditions. A description of the offsite power network and the circuits to the Class 1E ES buses is found in the SAR, Chapter 8 (Ref. 1).

When the unit is off-line, unit equipment is typically powered from a startup transformer or from the unit auxiliary transformer back fed from the 500 kV switchyard. If the power source is transferred to startup transformer No. 2, sufficient loads are automatically shed or procedurally limited to avoid a degraded voltage condition (since startup transformer No. 2 is not sufficient to simultaneously provide power for full loading from both units.)

The normal onsite standby power source for each 4.16 kV ES bus is a dedicated DG. DGs 1 and 2 are dedicated to ES buses A3 and A4, respectively. ES buses A3 and A4 may be cross-tied during operation in shutdown conditions. Ratings for emergency DGs 1 and 2 satisfy the guidance of Regulatory Guide 1.9 (Ref. 2). The continuous service rating of each DG is 2600 kW with 10% overload permissible for up to 2 hours in any 24 hour period. However, the "intended service" rating provided by the manufacturer is 2750 kW. This is the value used in postulated DG loading evaluations (Ref. 3).

The AAC DG is an additional onsite power source. The AAC DG was installed to meet the requirements of 10 CFR 50.63(c)(iii)(2) (Ref. 4). The AAC DG and its associated power supply system is designed to provide vital and non-vital 4160 V power to either ANO-1, ANO-2, or both units simultaneously. The design considerations for the AAC DG assumed the engine would be started from the control room and be at rated speed and voltage within 10 minutes after the onset of a station blackout condition. The AAC DG has a continuous rating of 4400 kW at 4160 V. The machines prime rating, which equates to a 2 hour rating is 4840 kW (110% of the continuous rating) (Ref. 5).

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 5 and 6 and during movement of irradiated fuel assemblies ensures that:

a. The unit can be maintained in MODES 5 or 6 for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate AC electrical power is provided to mitigate a postulated fuel handling accident.

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1 and 2 have no specific analyses in MODES 3, 4, 5, and 6. Worst-case bounding events are deemed not credible in MODES 5 and 6 because the energy contained within the reactor coolant pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences.

During MODES 1 and 2, various deviations from the analysis assumptions and design requirements are allowed within the Required Actions. This allowance is in recognition that certain testing and maintenance activities must be conducted provided an acceptable level of risk is not exceeded. During MODES 5 and 6, performance of a significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are planned and administratively controlled. Relaxations from MODE 1, 2, 3, and 4 LCO 3.8.1 requirements are acceptable during shutdown MODES based on:

a. The fact that time in an outage is limited;

b. Requiring appropriate compensatory measures for certain conditions which may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operating MODE analyses, or both;

c. Prudent utility consideration of the risk associated with multiple activities that could affect multiple systems; and

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODE 1, 2, 3, and 4 OPERABILITY requirements) with systems assumed to function during an event.

e. The unit, while in a shutdown condition, can not affect the power grid in a manner that would result in a loss of offsite power due to a turbine trip.

In MODES 5 and 6, the AC sources satisfy Criterion 4 of 10 CFR 50.36 (Ref. 1). During handling of irradiated fuel, the AC sources satisfy Criterion 3 of 10 CFR 50.36.

LCO

One offsite circuit capable of supplying the onsite Class 1E power distribution subsystem(s) of LCO 3.8.10, "Distribution Systems - Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE DG, associated with a distribution system train required to be OPERABLE by LCO 3.8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of a postulated fuel handling accident.

The offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the Engineered Safeguards (ES) bus(es).

One offsite circuit consists of startup transformer No. 1, its supply from the switchyard bus tie autotransformer, either the 4160 V bus A1 or A2, and the feeder breaker providing power to the required 4160 V ES bus(es). An alternative for this offsite circuit consists of the unit auxiliary transformer, its supply from the switchyard bus tie autotransformer and the overhead swing leads, either the 4160 V bus A1 or A2, and the feeder breaker providing power to the required 4160 V ES bus(es). A second offsite circuit consists of startup transformer No. 2, its supply from the 161 kV switchyard ring bus, either the 4160 V bus A1 or A2, and the feeder breaker providing power to the required 4160 V ES bus(es). Another alternative for the above described offsite circuits consists of the unit auxiliary transformer, its supply from the 500 kV switchyard via backfeed through the main transformer (with the main generator disconnects removed), either the 4160 V bus A1 or A2, and the feeder breaker providing power to the required 4160 V ES bus(es). An offsite circuit includes the necessary breakers and equipment to properly align the circuit from the transmission line sources to the required 4160 V ES bus(es). It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply the required equipment. Only one of the possible offsite circuits is "required" provided it can supply the required Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. If a single offsite circuit cannot provide all the required distribution subsystem(s), a second offsite circuit is also "required."

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply the required equipment.

The DG (DG 1, DG 2, or AAC DG) must be capable of being started, accelerating to rated speed and voltage, and being connected to its respective ES bus on determination of a loss of offsite power. The DG must be capable of accepting all required loads, and must continue to operate until offsite power can be restored to the ES buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby at ambient conditions.

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single onsite power source to supply the required equipment.

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 and during movement of irradiated fuel assemblies in either the reactor building or fuel handling area provide assurance that:

a. Systems to provide adequate decay heat removal are available for the irradiated fuel assemblies in the core;

b. Systems needed to mitigate a fuel handling accident involving handling irradiated fuel are available; and

c. Instrumentation and control capability is available for monitoring and maintaining the unit in MODE 5 or 6.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

A.1

An offsite circuit would be considered inoperable if it were not available to one required ES train. Although two trains may be required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and irradiated fuel movement. By the allowance of the option to declare features inoperable with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS.

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required DG inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in both the reactor building and the fuel handling area, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that which would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

If the unit is in MODES 1, 2, 3, or 4, and LCO 3.8.2 is applicable only because the movement of recently irradiated fuel is in progress, then the Applicability is exited when Required Action A.2.2 is completed (i.e., movement of irradiated fuel is suspended) and the other Required Actions are no longer required.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of a fuel handling accident. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.2.2

This SR helps to ensure the availability of the standby electrical power supply to support systems necessary to avoid immediate difficulty, assuming a loss of all offsite power.

For the purposes of SR 3.8.2.2 testing with application of the Note, the DGs are started from standby conditions. Standby conditions for a DG means that the diesel engine oil is being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

SR 3.8.2.2 requires that the DG starts from standby conditions and achieves "ready-to-load" conditions (i.e., minimum voltage). A minimum output voltage of 3750 V is ~90% of the nominal 4160 V output voltage. This value allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating.

This SR is modified by two Notes. Note 1 allows this test to be satisfied by the performance of SR 3.8.1.2 for the emergency DGs. Note 2 indicates that DG starts for

this Surveillance may be preceded by an engine prelube period and followed by a warmup period prior to loading. This is intended to minimize the wear on moving parts that do not get lubricated when the engine is not running.

The 31 day Frequency provides adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.2.3

This Surveillance demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer pump is OPERABLE, the fuel oil piping system is intact, and the fuel delivery piping is not obstructed. This SR is modified by a Note that allows this test to be satisfied by the performance of SR 3.8.1.5 for the emergency DGs.

The design of the fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day tanks during DG monthly testing. Therefore, a 31 day Frequency is specified to correspond to the interval for DG testing.

REFERENCES

1. SAR, Chapter 8.

2. Regulatory Guide 1.9, "Selection, Design, and Qualification of Diesel Generator Units used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants," Rev. 3, July 1993.

3. Calculation 86-E-0002-01.

4. 10 CFR 50.63(c)(iii)(2).

5. ANO-2 SAR Section 8.3.3.

6. 10 CFR 50.36.

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

LCO 3.8.5 DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately
	AND	

(continued)

A. (continued)	A.2.5	Enter applicable Conditions and Required Actions of LCO 3.4.11, "Low Temperature Overpressure Protection (LTOP)," for LTOP features made inoperable by DC Electrical Power System.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	----------NOTE---------- The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. ---------- For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3.	In accordance with applicable SRs

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.8 Inverters - Shutdown

BASES

BACKGROUND

A description of the inverters is provided in the Bases for LCO 3.8.7, "Inverters - Operating."

APPLICABLE SAFETY ANALYSES

The DC to AC inverters are designed to provide the required capacity, capability, and reliability to ensure the availability of necessary power to safety significant instrumentation and controls.

The OPERABILITY of the inverters is consistent with the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the required inverters to each 120 VAC vital bus during MODES 5 and 6 ensures that:

a. The unit can be maintained in MODE 5 or 6 for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate power is available to mitigate a postulated fuel handling accident.

In MODES 5 and 6, the inverters are part of the distribution system and, as such, satisfy Criterion 4 of 10 CFR 50.36 (Ref. 2). During handling of irradiated fuel, the inverters satisfy Criterion 3 of 10 CFR 50.36.

LCO

The inverters provide an uninterruptible supply of AC electrical power to the 120 VAC vital buses even if the 4.16 kV safety buses are de-energized. This ensures the availability of sufficient inverter power sources to operate the unit in a safe manner and to mitigate the consequences of a postulated fuel handling accident.

An OPERABLE inverter must be supplied power from its associated Class 1E 125 VDC electrical power system, and supplying the associated AC vital bus with acceptable output AC voltage.

This LCO is modified by a Note that allows one required inverter to be disconnected from a battery for ≤ 2 hours to allow load transfer to or from a swing inverter, if the vital bus(es) is powered from an alternate AC source during this time.

APPLICABILITY

The inverters required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies in either the reactor building or fuel handling area provide assurance that:

a. Systems to provide adequate decay heat removal are available for the irradiated fuel in the core;

b. Systems needed to mitigate a fuel handling accident are available; and

c. Instrumentation and control capability is available for monitoring and maintaining the unit in MODE 5 or 6.

Inverter requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

If two trains are required by LCO 3.8.10, "Distribution Systems - Shutdown," the remaining OPERABLE inverters may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for positive reactivity additions. The Required Action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory, provided the required SDM is maintained. By the allowance of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in both the reactor building and the fuel handling area, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6)). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that which would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM..

If the unit is in MODES 1, 2, 3, or 4, and LCO 3.8.8 is applicable only because the movement of irradiated fuel is in progress, then the Applicability is exited when Required Action A.2.2 is completed (i.e., movement of irradiated fuel is suspended) and the other Required Actions are no longer required.

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of a fuel handling accident. It is further required to immediately initiate action to restore the required inverters and to continue this action until restoration is accomplished in order to provide the necessary inverter power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required low temperature overpressure protection (LTOP) feature may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to LTOP. Pursuant to LCO 3.0.6, the LTOP ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct entry into the appropriate LTOP Conditions and Required Actions, which results in taking the appropriate LTOP actions.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required inverters should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power or powered from the alternate AC source.

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and 120 VAC vital buses energized from the inverter. The verification of proper voltage output ensures that the required power is readily available for the instrumentation connected to the 120 VAC vital buses. The 31 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions.

REFERENCES

1. 10 CFR 50.36.

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and 120 VAC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE by the following specifications:

LCO 3.3.9, "Source Range Neutron Flux,"
LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits,"
LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled,"
LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled,"
LCO 3.4.11, "Low Temperature Overpressure (LTOP) Protection,"
LCO 3.7.9, "Control Room Emergency Ventilation System (CREVS),"
LCO 3.7.10, "Control Room Emergency Air Conditioning System (CREACS),"
LCO 3.7.12, "Fuel Handling Area Ventilation System (FHAVS),"
LCO 3.9.2, "Nuclear Instrumentation," for one monitor,
LCO 3.9.4, "Decay Heat Removal (DHR) and Coolant Circulation - High Water Level," and
LCO 3.9.5, "Decay Heat Removal (DHR) and Coolant Circulation - Low Water Level,"

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME

A.	One or more required AC, DC, or 120 VAC vital bus electrical power distribution subsystems inoperable.	A.1	Declare associated supported required feature(s) inoperable.
		OR	
		A.2.1	Suspend CORE ALTERATIONS.
		AND	

Immediately

Immediately

(continued)

A. (continued)	A.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
	AND		
	A.2.3	Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND		Immediately
	A.2.4	Initiate actions to restore required AC, DC, and 120 VAC vital bus electrical power distribution subsystems to OPERABLE status.	
	AND		Immediately
	A.2.5	Declare associated required decay heat removal subsystem(s) inoperable.	
	AND		
	A.2.6	Enter applicable Conditions and Required Actions of LCO 3.4.11, "Low Temperature Overpressure Protection (LTOP)," for LTOP features made inoperable by Electrical Power Distribution System.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems.	31 days

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

A description of the AC, DC and 120 VAC vital bus electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating."

APPLICABLE SAFETY ANALYSES

The AC, DC, and 120 VAC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, and reliability to ensure the availability of necessary power to ES systems.

The OPERABILITY of the minimum AC, DC, and 120 VAC vital bus electrical power distribution subsystems during MODES 5 and 6, and during movement of irradiated fuel assemblies ensures that:

a. The unit can be maintained in MODE 5 or 6 for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate power is provided to mitigate a postulated fuel handling accident.

In MODES 5 and 6, the AC and DC electrical power distribution systems satisfy Criterion 4 of 10 CFR 50.36 (Ref. 2). During handling of irradiated fuel, the AC and DC electrical power distribution systems satisfy Criterion 3 of 10 CFR 50.36.

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by LCO 3.3.9, "Source Range Neutron Flux," LCO 3.3.16, "RCS Pressure and Temperature (P/T) Limits," LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled," LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled," LCO 3.4.11, "Low Temperature Overpressure (LTOP) Protection," LCO 3.7.9, "Control Room Emergency Ventilation System (CREVS)," LCO 3.7.10, "Control Room Emergency Air Conditioning System (CREACS)," LCO 3.7.12, "Fuel Handling Area Ventilation System (FHAVS)," LCO 3.9.2, "Nuclear Instrumentation" (for one monitor only), LCO 3.9.4, "Deacy Heat Removal (DHR) and Coolant Circulation," and LCO 3.9.5, "Deacy Heat Removal (DHR) and Coolant Circulation - Low Water Level" depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support

features. This LCO requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system OPERABLE ensures the availability of sufficient power to operate the unit in a safe manner.

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies in either the reactor building or fuel handling area, provide assurance that:

a. Systems to provide adequate decay heat removal are available for the irradiated fuel in the core;

b. Systems needed to mitigate a fuel handling accident in either the reactor building or fuel handling area are available; and

c. Instrumentation and control capability is available for monitoring and maintaining the unit in MODES 5 or 6.

The AC, DC, and 120 VAC vital bus electrical power distribution subsystem requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, A.2.4, A.2.5, and A.2.6

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystems LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in both the reactor building and the fuel handling area, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6)). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that which would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation.

Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

If the unit is in MODES 1, 2, 3, or 4, and LCO 3.8.10 is applicable only because the movement of irradiated fuel is in progress, then the Applicability is exited when Required Action A.2.2 is completed (i.e., movement of irradiated fuel is suspended) and the other Required Actions are no longer required.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of a fuel handling accident. It is further required to immediately initiate action to restore the required AC and DC electrical power distribution subsystems and to continue this action until restoration is accomplished in order to provide the necessary power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required decay heat removal (DHR) subsystem or a required low temperature overpressure protection (LTOP) feature may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to coolant circulation, heat removal and LTOP. Pursuant to LCO 3.0.6, the DHR ACTIONS and LTOP ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct declaring DHR inoperable, which results in taking the appropriate DHR actions and Required Action A.2.6 is provided to direct entry into the appropriate LTOP Conditions and Required Actions, which results in taking the appropriate LTOP actions.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power.

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems are functioning properly, with all the buses energized. The 31 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

REFERENCES

1. 10 CFR 50.36.
