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2CAN100701

October 22, 2007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: License Amendment Request
Technical Specification Changes Regarding Mode Change Limitations and
Associated Bases Using the Consolidated Line Item Improvement Process
Arkansas Nuclear One, Unit 2
Docket No. 50-368
License No. NPF-6

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment would modify Technical Specification (TS) requirements for mode change limitations in Limiting Condition for Operation (LCO) 3.0.4 and Surveillance Requirement (SR) 4.0.4. The modification of these specifications results in changes to various other ANO-2 TSs as described in the attachments to this submittal. The proposed changes are based on Technical Specification Task Force (TSTF)-359, Revision 9. The NRC approved adoption of TSTF-359 using the Consolidated Line Item Improvement Process (CLIIP).

Attachment 1 provides a description of the proposed change (including a table of affected TSs with a brief descriptor of the change), the requested confirmation of applicability, and plant specific verifications. Attachment 2 provides the existing TS pages marked up to illustrate the proposed change. Attachment 3 provides revised (clean) TS pages. Attachment 4 provides a summary of the regulatory commitments made in this submittal. Attachment 5 provides the existing TS Bases pages marked up to show the proposed change.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that the change involves no significant hazards consideration. The bases for these determinations are included in the attached submittal.

The proposed change includes new commitments, as described in Attachment 4 of this submittal.

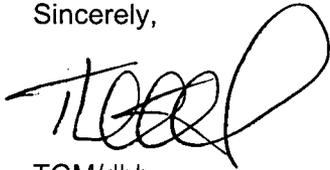
Entergy requests approval of the proposed amendment by April 1, 2008. Once approved, the amendment shall be implemented within 60 days. Although this request is neither exigent nor emergency, your prompt review is requested.

A001
NRR

If you have any questions or require additional information, please contact David Bice at 479-858-5338.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 22, 2007.

Sincerely,



TGM/dbb

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)
3. Revised Technical Specification Pages
4. List of Regulatory Commitments
5. Proposed Technical Specification Bases Changes (mark-up)

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Attachment 1

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Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-6 for Arkansas Nuclear One, Unit 2 (ANO-2).

The proposed amendment would modify Technical Specifications (TS) requirements for mode change limitations in Limiting Condition for Operation (LCO) 3.0.4 and Surveillance Requirement (SR) 4.0.4.

The change is consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification (STS) change TSTF-359 Revision 8, as modified by the notice in the *Federal Register* published on April 4, 2003. That *Federal Register* notice announced the availability of this TS improvement through the Consolidated Line Item Improvement Process (CLIIP). Following the aforementioned notice, the TSTF submitted Revision 9 to TSTF-359, incorporating the changes as modified in the above Federal Register notice. The NRC accepted this revision on May 12, 2003. The changes proposed in this submittal are, therefore, based on TSTF-359, Revision 9.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

Entergy Operations, Inc. (Entergy) has reviewed the safety evaluation dated March 28, 2003 as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-359 Revision 8 (and subsequently, Revision 9 to TSTF-359). Entergy has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to ANO-2 and justify this amendment for the incorporation of the changes to the ANO-2 TS.

2.2 Optional Changes and Variations

Entergy is not proposing any major variations or deviations from the TS changes described in the modified TSTF-359 Revision 8 (as captured in Revision 9 to TSTF-359) and the NRC Staff's model safety evaluation (SE) dated March 28, 2003. However, a small number of minor variations, such as formatting or terminology differences to accommodate the "custom" TSs of ANO-2 (i.e., not updated to the revised STS of NUREG 1432 for Combustion Engineering (CE) Plants), and other minor variations as described below are proposed.

TSTF-359, the associated Bases markup, and the model SE briefly discuss application of LCO 3.0.4.c. The Bases states:

LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification which states LCO 3.0.4.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACTIONS or to a

specific Required Action of a Specification. The risk assessments performed to justify the use of LCO 3.0.4.b usually only consider systems and components. For this reason, LCO 3.0.4.c is typically applied to Specifications which describe values and parameters (e.g., [Containment Air Temperature, Containment Pressure, MCPR, Moderator Temperature Coefficient]), and may be applied to other Specifications based on NRC plant-specific approval.

The only NUREG 1432 STS markup page included in TSTF-359 relating to LCO 3.0.4.c is for RCS Specific Activity. However, in accordance with the TSTF-359 intent and the allowance clarified by the Bases excerpt above, and because ANO-2 is a "custom" TS plant, one other application of LCO 3.0.4.c is proposed in Section 2.3 below. Because the TSTF concludes that LCO 3.0.4.c "may be applied to other Specifications based on NRC plant-specific approval," this change is considered a minor variation of the TSTF.

The additional application of LCO 3.0.4.c involves an existing allowance in TS 3.4.3, Pressurizer Safety Valves. Action 'b' of this specification permits testing of one pressurizer safety valve at a time in Mode 3, delaying entry into Action 'a' for up to 18 hours. Because this allowance was previously approved by the NRC, application of LCO 3.0.4.c is reasonable and no further risk evaluation, other than that required by 10 CFR 50.65 (Maintenance Rule), is necessary. The portion of Action 'b' being revised for LCO 3.0.4.c application is ambiguous with regard to its original intent. Therefore, to ensure the action will be applied correctly, additional clarification is incorporated (see Section 2.3 Description of Change for TS 3.4.3).

Additional details relating to each affected specification are outlined in Section 2.3 below.

2.3 Itemization and Brief Description of Changes

Some ANO-2 specific terminology is retained because the ANO-2 TS are based on the old STSs of NUREG 0336. Nevertheless, substantial upgrades consistent with the new STSs of NUREG 1432 have been made to the ANO-2 TSs over recent years. In general, the proposed changes contained within this submittal closely mimic the NUREG 1432 STSs and that of TSTF-359. Minor wording differences include 1) the use of Allowable Outage Time (AOT) in lieu of the STS phrase "Completion Time," 2) ANO-2 surveillance numbering of 4.xxx in lieu of STS surveillance numbering, which is depicted as SR 3.xxx, and 3) the elimination of the "PORV" acronym, since ANO-2 does not have "power operated relief valves." Such minor differences in terminology and or formatting between the ANO-2 TSs and the STS are not described further in this submittal.

<u>ANO-2 TS REFERENCE</u>	<u>DESCRIPTION OF CHANGE</u>
3.0.4 (LCO Applicability)	Changed in accordance with TSTF-359.
4.0.4 (SR Applicability)	Changed in accordance with TSTF-359.
3.3.3.5 (Remote Shutdown Instruments)	Changed in accordance with TSTF-359.
3.3.3.6 (Post Accident Monitoring)	Changed in accordance with TSTF-359.
3.4.3 (Pressurizer Safety Valves)	<p>LCO 3.0.4.c applicability is added to Action "b". Currently, the Action permits suspension of LCO 3.0.4 for the purposes of testing one valve at a time upon entry into or during operation in Mode 3. The TSTF intent is to delete all exceptions to LCO 3.0.4 and apply LCO 3.0.4.c where appropriate. Therefore, the LCO 3.0.4 exception is deleted and LCO 3.0.4.c applicability is added. This is an "equivalent" change and is subsequently, risk neutral.</p> <p>The Action wording is additionally revised in this same paragraph to clarify the LCO exemption in support of valve testing. This wording is "original" TS wording with the exception of the "18 hours," which was changed from 12 hours in Amendment 36 by NRC letter dated October 19, 1982 (copy available upon request). The current wording does not clearly exempt the requirements of Action "a" for 18 hours, although this was clearly the intent since Action "a" would only allow 15 minutes to restore valve operability, regardless of the reason for inoperability. The NRC stated in their October 19, 1982 SE that "the current TS 3.4.3 Action Statement 3.4.3.b also provides for suspension of the LCO (emphasis added) for up to 12 hours for entry into and operations in MODE 3 to test and adjust the valves." However, LCO 3.0.4 does not permit exemption from requirements of Action Statements, as currently worded, but only permits entry into a Mode of operation while relying on Action Statements. The additional proposed change to this paragraph acts only to clarify the original intent of the Action exception. Therefore, this change is administrative in nature and involves no additional plant risk. A markup of the Bases is provided in Attachment 5, which includes additional clarification to ensure that the summed time of both valves being individually inoperable in Mode 3 does not exceed 18 hours. These Bases will be revised upon approval of this amendment under the requirements of 10 CFR 50.59.</p>

<u>ANO-2 TS REFERENCE</u>	<u>DESCRIPTION OF CHANGE</u>
3.4.6.1 (RCS Leak Detection)	Changed in accordance with TSTF-359.
3.4.8 (RCS Specific Activity)	LCO 3.0.4.c applicability added in accordance with TSTF-359.
3.4.12 (Low Temperature Overpressure Protection)	Changes are made consistent with TSTF-359.
3.5.3 (ECCS Subsystem – Shutdown)	Changes are made consistent with TSTF-359.
3.7.1.2 (Emergency Feedwater)	Changes are made consistent with TSTF-359.
3.7.1.5 (Main Steam Isolation Valves)	The STS does not contain an exemption to LCO 3.0.4 for MSIVs and, therefore, this exemption is deleted, consistent with the intent of TSTF-359.
3.7.6.1 (CREVS)	Changed in accordance with TSTF-359.
3.8.1.1 (AC Sources)	Changes are made consistent with TSTF-359.

The NUREG 1432 STS mark-up contained in TSTF-359 included deletions of the phrase "LCO 3.0.4 is not applicable" from STS 3.3.1 (Reactor Protective System (RPS) Instrumentation - Operating), 3.3.2 (RPS Instrumentation – Shutdown), 3.3.5 (Emergency Safety Features Actuation System Instrumentation), 3.3.7 (Diesel Generator – Loss of Voltage Start), 3.4.11 (Pressurizer Power Operated Relief Valves), 3.6.8 (Hydrogen Recombiners), 3.6.9 (Hydrogen Mixing System), and 3.7.4 (Atmospheric Dump Valves). There are no proposed changes to the ANO-2 TSs related to these specifications either due to the phrase not being present within the respective ANO-2 specification or because ANO-2 does not have an equivalent TS.

The mark-up of the bases associated with LCO 3.0.4 and SR 4.0.4 as presented in NUREG 1432 and TSTF-359 are included in Attachment 5 for information purposes. These bases will be revised in accordance with the ANO-2 TS Bases Control Program during implementation of this amendment, once approved, as committed to in Attachment 4 of this submittal.

3.0 REGULATORY ANALYSIS

3.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met.

The proposed changes are applicable to the Technical Specifications (TSs) as governed by 10 CFR 50.36 and do not impact any General Design Criteria (GDC) as described in 10 CFR 50, Appendix A. Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

In conclusion, Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and does not affect conformance with any GDC differently than described in the Safety Analysis Report (SAR).

3.2 No Significant Hazards Consideration

A change is proposed to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs) to adopt Technical Specification Task Force (TSTF) No. 359, Revision 9, "Increase Flexibility in Mode Restraints," under the Consolidated Line Item Improvement Process (CLIIP). The proposed change would permit increasing plant mode of operation with certain inoperable TS-related equipment provided overall risk is shown to be acceptable.

Entergy Operations, Inc. (Entergy) has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the *Federal Register* as part of the CLIIP. Entergy has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to ANO-2 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.3 Verification and Commitments

As discussed in the notice of availability published in the *Federal Register* on April 4, 2003 for this TS improvement, plant-specific verifications were performed as follows:

Entergy will establish ANO-2 TS Bases for Limiting Condition for Operation (LCO) 3.0.4 and Surveillance Requirement (SR) 4.0.4, which state that use of the TS mode change limitation flexibility established by LCO 3.0.4 and SR 4.0.4 is not to be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to operable status before entering an associated mode or other specified condition in the TS Applicability.

The modification also includes changes to the bases for LCO 3.0.4 and SR 4.0.4 that provide details on how to implement the new requirements. The bases changes provide guidance for changing modes or other specified conditions in the Applicability when an LCO is not met. The bases changes describe in detail how: LCO 3.0.4.a allows entry into a mode or other specified condition in the Applicability with the LCO not met when the associated actions to be entered permit continued operation in the mode or other specified condition in the Applicability for an unlimited period of time; LCO 3.0.4.b allows entry into a mode or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the mode or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; and LCO 3.0.4.c allows entry into a mode or other specified condition in the Applicability with the LCO not met based on a Note in the Specification, which is typically applied to Specifications which describe values and parameters (e.g., RCS Activity), though it may be applied to other Specifications based on NRC plant-specific approval. The bases also state that any risk impact should be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, NRC Regulatory Guide 1.182, "Assessing and Managing Risks Before Maintenance Activities at Nuclear Power Plants," and that the results of the risk assessment shall be considered in determining the acceptability of entering the mode or other specified condition in the Applicability, and any corresponding risk management actions. In addition, the bases state that upon entry into a mode or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry in to the applicable Conditions and Required Actions for no more than the duration of the applicable Completion Time or until the LCO is met or the unit is not within the Applicability of the TS. The bases also state that SR 4.0.4 does not restrict changing modes or other specified conditions of the Applicability when a Surveillance has not been performed within the specified Frequency, provided the requirement to declare the LCO not met has been delayed in accordance with SR 4.0.3.

The CLIIP for TSTF-359 required a utility to have both a bases control program and SR 3.0.1 (SR 4.0.1 for ANO-2) wording consistent with the STS. ANO-2 currently has a bases control program and SR 3.0.1 (4.0.1 for ANO-2) wording consistent with the STS of NUREG 1432, Revision 3.1.

4.0 ENVIRONMENTAL CONSIDERATIONS

Entergy Operations, Inc. (Entergy) has reviewed the environmental evaluation included in the model safety evaluation dated March 28, 2003 as part of the CLIIP. Entergy has concluded that the staff's findings presented in that evaluation are applicable to ANO-2 and the evaluation is hereby incorporated by reference for this application.

Attachment 2

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Proposed Technical Specification Changes (mark-up)

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

- 3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification.
- 3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.
- 3.0.3 In the event a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied because of circumstances in excess of those addressed in the specification within 1 hour, action shall be initiated to place the unit in a mode in which the specification does not apply by placing it, as applicable, in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the next 6 hours, and in at least COLD SHUTDOWN within the following 24 hours unless corrective measures are completed that permit operation under the permissible ACTION statements for the specified time interval as measured from initial discovery or until the reactor is placed in a MODE in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specification.
- 3.0.4 When an LCO is not met, eEntry into an ~~OPERATIONAL~~ MODE or other specified condition in the Applicability shall only~~not~~ be made:
- a. When the ~~conditions of the Limiting Condition for Operation are not met and the associated ACTIONS to be entered requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL MODE or other specified condition may be made in accordance with ACTION requirement when conformance to them permits continued operation in the MODE or other specified condition in the Applicability of the facility for an unlimited period of time;~~
 - b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
 - c. When an allowance is stated in the individual value, parameter, or other Specification.

~~This specification provision shall not prevent changes in passage through or to OPERATIONAL MODES or other specified conditions in the Applicability that are required to comply with ACTION requirements or that are part of a shutdown of the unit. Exceptions to these requirements are stated in the individual specifications.~~

LCO APPLICABILITY (continued)

- 3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it, as applicable, in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the next 6 hours, and in at least COLD SHUTDOWN within the following 24 hours. This specification is not applicable in MODES 5 or 6.
- 3.0.6 Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

APPLICABILITY

SURVEILLANCE REQUIREMENTS

- 4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the Surveillance. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified interval shall be failure to meet the LCO except as provided in 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.
- 4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.
- 4.0.3 If it is discovered that a Surveillance was not performed within its specified interval, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable ACTION(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable ACTION(s) must be entered.

- 4.0.4 ~~Entry into an OPERATIONAL MODE or other specified condition in the Applicability condition shall only not be made when unless the LCO's Surveillance Requirement(s) associated with the Limiting Condition for Operation have been met performed within their stated surveillance interval specified Frequency, excepter as otherwise specified provided in SR 4.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.~~

~~This provision shall not prevent entrypassege through or into OPERATIONAL MODES or other specified conditions in the Applicability that areas required to comply with ACTIONs requirements or that are part of a shutdown of the unit.~~

INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a.—With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.
- b.—~~The provisions of Specification 3.0.4 are not applicable.~~

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.

INSTRUMENTATION

POST-ACCIDENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The post-accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a.—As shown in Table 3.3-10.

b.—~~The provisions of Specification 3.0.4 are not applicable.~~

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each post-accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-10.

REACTOR COOLANT SYSTEM

SAFETY VALVES – OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3 All pressurizer code safety valves shall be OPERABLE with a lift setting 2500 psia $\pm 3\%^*$.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.
- b. The provisions of specification 3.0.4.c may be applied and the requirements of ACTION "a" suspended for one valve at a time for up to 18 hours for entry into and during operation in MODE 3 for the purpose of setting the pressurizer code safety valves under ambient (hot) conditions provided a preliminary cold setting was made prior to heatup.

SURVEILLANCE REQUIREMENTS

4.4.3 No additional Surveillance Requirements other than those required by the Inservice Testing Program.

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure. If found outside of a $\pm 1\%$ tolerance band, the setting shall be adjusted to within $\pm 1\%$ of the lift setting shown.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection instrumentation shall be OPERABLE:

- a. One containment sump level monitor
- b. One containment atmosphere particulate radioactivity monitor, and
- c. One containment atmosphere gaseous radioactivity monitor.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one or more containment atmosphere radioactivity monitor(s) inoperable, operation may continue for up to 30 days for each inoperable monitor provided:
 - 1. grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours, or
 - 2. a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;*otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the containment sump level monitor inoperable, operation may continue for up to 30 days provided a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;* otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With the containment sump level monitor inoperable and one containment atmosphere radioactivity monitor inoperable, operation may continue for up to 30 days for each inoperable monitor provided a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;* otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. ~~The provisions of Specification 3.0.4 are not applicable.~~

* Not required until 12 hours after establishment of steady state conditions.

REACTOR COOLANT SYSTEM

SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

- a. $\leq 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$, and
- b. $\leq 100/E \mu\text{Ci/gram}$.

APPLICABILITY: MODES 1, 2, 3, 4, and 5.

ACTION:

MODES 1, 2 and 3*:

- a. With the specific activity of the primary coolant $> 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$ for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in at least HOT STANDBY with $T_{\text{avg}} < 500^\circ\text{F}$ within 6 hours. The provisions of Specification 3.0.4.c are applicable.
- b. With the specific activity of the primary coolant $> 100/E \mu\text{Ci/gram}$, be in at least HOT STANDBY $T_{\text{avg}} < 500^\circ\text{F}$ within 6 hours.

* With $T_{\text{avg}} \geq 500^\circ\text{F}$

REACTOR COOLANT SYSTEM

LOW TEMPERATURE OVERPRESSURE PROTECTION (LTOP) SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.12 The LTOP system shall be OPERABLE with each SIT isolated that is pressurized to ≥ 300 psig, and a maximum of one HPSI pump capable of injecting into the RCS and:

- a. Two LTOP relief valves with a lift setting of ≤ 430 psig, or
- b. The Reactor Coolant System depressurized with an RCS vent path ≥ 6.38 square inches.

APPLICABILITY: MODE 4 with $T_C \leq 220^\circ\text{F}$, MODE 5, MODE 6 with reactor vessel head in place.*

ACTION:

NOTE: Specification 3.0.4.b is not applicable to LTOP relief valves when entering Mode 4.

- a. With one LTOP relief valve inoperable in MODE 4, restore the inoperable valve to OPERABLE status within 7 days or depressurize and vent the RCS through a ≥ 6.38 square inch vent path within the next 8 hours.
- b. With one LTOP relief valve inoperable in MODE 5 or 6, restore the inoperable relief valve to OPERABLE status within 24 hours or depressurize and vent the RCS through a ≥ 6.38 square inch vent path within the next 8 hours.
- c. With both LTOP relief valves inoperable, depressurize and vent the RCS through a ≥ 6.38 square inch vent path within 8 hours.
- d. With a SIT not isolated and pressurized to ≥ 300 psig, isolate the affected SIT within 1 hour. If the affected SIT is not isolated within 1 hour, either:
 - (1) Depressurize the SIT to < 300 psig within the next 12 hours, or
 - (2) Increase cold leg temperature to $> 220^\circ\text{F}$ within the next 12 hours.
- e. With more than one HPSI pump capable of injecting into the RCS, immediately initiate action to verify a maximum of one HPSI pump capable of injecting into the RCS.
- f. ~~The provisions of Specification 3.0.4 are not applicable.~~

* - when starting the first reactor coolant pump, the pressurizer water volume will be $< 910 \text{ ft}^3$.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS – $T_{avg} < 300^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

- 3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:
- a. One OPERABLE high-pressure safety injection pump, and
 - b. An OPERABLE flow path capable of taking suction from the refueling water tank on a Safety Injection Actuation Signal and automatically transferring suction to the containment sump on a Recirculation Actuation Signal.

APPLICABILITY: MODES 3* and 4.

ACTION:

NOTE: Specification 3.0.4.b is not applicable to ECCS subsystem when entering Mode 4.

- a. With no ECCS subsystem OPERABLE, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours.
- b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the NRC within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

SURVEILLANCE REQUIREMENTS

- 4.5.3 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.

* With pressurizer pressure < 1700 psia.

PLANT SYSTEMS

EMERGENCY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

- 3.7.1.2 Two emergency feedwater pumps and associated flow paths shall be OPERABLE with:
- a. One motor driven pump capable of being powered from an OPERABLE emergency bus, and
 - b. One turbine driven pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

NOTE: Specification 3.0.4.b is not applicable.

With one emergency feedwater pump inoperable, restore the inoperable pump to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

- 4.7.1.2 Each emergency feedwater pump shall be demonstrated OPERABLE:
- a. At least once per 31 days by:
 1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
 - b. In accordance with the Inservice Testing Program by:
 1. Verifying the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head. This surveillance requirement is not required to be performed for the turbine driven EFW pump until 24 hours after exceeding 700 psia in the steam generators.

PLANT SYSTEMS

MAIN STEAM ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- MODE 1 - With one main steam isolation valve inoperable, POWER OPERATION may continue provided the inoperable valve is either restored to OPERABLE status or closed within 4 hours; otherwise, be in HOT SHUTDOWN within the next 12 hours.
- MODES 2 and 3 - With one main steam isolation valve inoperable, subsequent operation in MODES 1, 2 or 3 may proceed provided:
- a. ~~The~~ the isolation valve is maintained closed;
 - b. ~~The provisions of Specification 3.0.4 are not applicable.~~
- ~~O~~ otherwise, be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.5 Each main steam isolation valve shall be demonstrated OPERABLE by verifying full closure within 3 seconds when tested pursuant to the Inservice Testing Program.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation and air conditioning systems shall be OPERABLE. (Note 1)

APPLICABILITY: MODES 1, 2, 3, 4, or during handling of irradiated fuel.

ACTION:

MODES 1, 2, 3, and 4

- a. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable, restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days and restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two control room emergency ventilation systems inoperable due to an inoperable control room boundary, restore the control room boundary to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two control room emergency ventilation systems inoperable for reasons other than ACTION d or with two control room emergency air conditioning systems inoperable, enter Specification 3.0.3.

During Handling of Irradiated Fuel

- f. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation; otherwise, suspend all activities involving the handling of irradiated fuel. ~~The provisions of Specification 3.0.4 are not applicable.~~
- g. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation; otherwise, suspend all activities involving the handling of irradiated fuel. ~~The provisions of Specification 3.0.4 are not applicable.~~

Note 1: The control room boundary may be open intermittently under administrative controls.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

- h. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable:
 - 1. restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation, and
 - 2. restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation;
 - 3. otherwise, suspend all activities involving the handling of irradiated fuel.
 - 4. ~~The provisions of Specification 3.0.4 are not applicable.~~
- i. With both control room emergency air conditioning systems or both control room emergency ventilation systems inoperable, immediately suspend all activities involving the handling of irradiated fuel.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system and
- b. Two separate and independent diesel generators each with:
 1. A day fuel tank containing a minimum volume of 300 gallons of fuel,
 2. A separate fuel storage system, and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

NOTE: Specification 3.0.4.b is not applicable to diesel generators.

- a. With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable, perform the following:
 1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
 2. Restore the offsite A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Startup Transformer No. 2 may be removed from service for up to 30 days as part of a preplanned preventative maintenance schedule. The 30-day allowance may be applied not more than once in a 10-year period. The provisions of Specification 3.0.4 are not applicable to Startup Transformer No. 2 during the 30-day preventative maintenance period.

Attachment 3

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Revised Technical Specification Pages

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

- 3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification.
- 3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.
- 3.0.3 In the event a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied because of circumstances in excess of those addressed in the specification within 1 hour, action shall be initiated to place the unit in a mode in which the specification does not apply by placing it, as applicable, in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the next 6 hours, and in at least COLD SHUTDOWN within the following 24 hours unless corrective measures are completed that permit operation under the permissible ACTION statements for the specified time interval as measured from initial discovery or until the reactor is placed in a MODE in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specification.
- 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:
- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
 - b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
 - c. When an allowance is stated in the individual value, parameter, or other Specification.

This specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

APPLICABILITY

SURVEILLANCE REQUIREMENTS

- 4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the Surveillance. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified interval shall be failure to meet the LCO except as provided in 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.
- 4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.
- 4.0.3 If it is discovered that a Surveillance was not performed within its specified interval, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable ACTION(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable ACTION(s) must be entered.

- 4.0.4 Entry into a MODE or other specified condition in the Applicability shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided in SR 4.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.

INSTRUMENTATION

POST-ACCIDENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The post-accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

As shown in Table 3.3-10.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each post-accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-10.

REACTOR COOLANT SYSTEM

SAFETY VALVES – OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3 All pressurizer code safety valves shall be OPERABLE with a lift setting 2500 psia $\pm 3\%^*$.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.
- b. The provisions of specification 3.0.4.c may be applied and the requirements of ACTION "a" suspended for one valve at a time for up to 18 hours for entry into and during operation in MODE 3 for the purpose of setting the pressurizer code safety valves under ambient (hot) conditions provided a preliminary cold setting was made prior to heatup.

SURVEILLANCE REQUIREMENTS

4.4.3 No additional Surveillance Requirements other than those required by the Inservice Testing Program.

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure. If found outside of a $\pm 1\%$ tolerance band, the setting shall be adjusted to within $\pm 1\%$ of the lift setting shown.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection instrumentation shall be OPERABLE:

- a. One containment sump level monitor
- b. One containment atmosphere particulate radioactivity monitor, and
- c. One containment atmosphere gaseous radioactivity monitor.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one or more containment atmosphere radioactivity monitor(s) inoperable, operation may continue for up to 30 days for each inoperable monitor provided:
 1. grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours, or
 2. a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;*otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the containment sump level monitor inoperable, operation may continue for up to 30 days provided a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;* otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With the containment sump level monitor inoperable and one containment atmosphere radioactivity monitor inoperable, operation may continue for up to 30 days for each inoperable monitor provided a Reactor Coolant System water inventory balance is performed at least once per 24 hours in accordance with Surveillance Requirement 4.4.6.2.1.a;* otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Not required until 12 hours after establishment of steady state conditions.

REACTOR COOLANT SYSTEM

SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

- a. $\leq 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$, and
- b. $\leq 100/E \mu\text{Ci/gram}$.

APPLICABILITY: MODES 1, 2, 3, 4, and 5.

ACTION:

MODES 1, 2 and 3*:

- a. With the specific activity of the primary coolant $> 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$ for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in at least HOT STANDBY with $T_{\text{avg}} < 500^\circ\text{F}$ within 6 hours. The provisions of Specification 3.0.4.c are applicable.
- b. With the specific activity of the primary coolant $> 100/E \mu\text{Ci/gram}$, be in at least HOT STANDBY $T_{\text{avg}} < 500^\circ\text{F}$ within 6 hours.

* With $T_{\text{avg}} \geq 500^\circ\text{F}$

REACTOR COOLANT SYSTEM

LOW TEMPERATURE OVERPRESSURE PROTECTION (LTOP) SYSTEM

LIMITING CONDITION FOR OPERATION

- 3.4.12 The LTOP system shall be OPERABLE with each SIT isolated that is pressurized to ≥ 300 psig, and a maximum of one HPSI pump capable of injecting into the RCS and:
- Two LTOP relief valves with a lift setting of ≤ 430 psig, or
 - The Reactor Coolant System depressurized with an RCS vent path ≥ 6.38 square inches.

APPLICABILITY: MODE 4 with $T_c \leq 220^\circ\text{F}$, MODE 5, MODE 6 with reactor vessel head in place.*

ACTION:

NOTE: Specification 3.0.4.b is not applicable to LTOP relief valves when entering Mode 4.

- With one LTOP relief valve inoperable in MODE 4, restore the inoperable valve to OPERABLE status within 7 days or depressurize and vent the RCS through a ≥ 6.38 square inch vent path within the next 8 hours.
- With one LTOP relief valve inoperable in MODE 5 or 6, restore the inoperable relief valve to OPERABLE status within 24 hours or depressurize and vent the RCS through a ≥ 6.38 square inch vent path within the next 8 hours.
- With both LTOP relief valves inoperable, depressurize and vent the RCS through a ≥ 6.38 square inch vent path within 8 hours.
- With a SIT not isolated and pressurized to ≥ 300 psig, isolate the affected SIT within 1 hour. If the affected SIT is not isolated within 1 hour, either:
 - Depressurize the SIT to < 300 psig within the next 12 hours, or
 - Increase cold leg temperature to $> 220^\circ\text{F}$ within the next 12 hours.
- With more than one HPSI pump capable of injecting into the RCS, immediately initiate action to verify a maximum of one HPSI pump capable of injecting into the RCS.

* - when starting the first reactor coolant pump, the pressurizer water volume will be $< 910 \text{ ft}^3$.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS – $T_{avg} < 300^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

- 3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:
- One OPERABLE high-pressure safety injection pump, and
 - An OPERABLE flow path capable of taking suction from the refueling water tank on a Safety Injection Actuation Signal and automatically transferring suction to the containment sump on a Recirculation Actuation Signal.

APPLICABILITY: MODES 3* and 4.

ACTION:

NOTE: Specification 3.0.4.b is not applicable to ECCS subsystem when entering Mode 4.

- With no ECCS subsystem OPERABLE, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours.
- In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the NRC within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

SURVEILLANCE REQUIREMENTS

- 4.5.3 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.

* With pressurizer pressure < 1700 psia.

PLANT SYSTEMS

EMERGENCY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

- 3.7.1.2 Two emergency feedwater pumps and associated flow paths shall be OPERABLE with:
- a. One motor driven pump capable of being powered from an OPERABLE emergency bus, and
 - b. One turbine driven pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

NOTE: Specification 3.0.4.b is not applicable.

With one emergency feedwater pump inoperable, restore the inoperable pump to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

- 4.7.1.2 Each emergency feedwater pump shall be demonstrated OPERABLE:
- a. At least once per 31 days by:
 1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
 - b. In accordance with the Inservice Testing Program by:
 1. Verifying the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head. This surveillance requirement is not required to be performed for the turbine driven EFW pump until 24 hours after exceeding 700 psia in the steam generators.

PLANT SYSTEMS

MAIN STEAM ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- MODE 1 - With one main steam isolation valve inoperable, POWER OPERATION may continue provided the inoperable valve is either restored to OPERABLE status or closed within 4 hours; otherwise, be in HOT SHUTDOWN within the next 12 hours.
- MODES 2 and 3 - With one main steam isolation valve inoperable, subsequent operation in MODES 1, 2 or 3 may proceed provided the isolation valve is maintained closed; otherwise, be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.5 Each main steam isolation valve shall be demonstrated OPERABLE by verifying full closure within 3 seconds when tested pursuant to the Inservice Testing Program.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation and air conditioning systems shall be OPERABLE. (Note 1)

APPLICABILITY: MODES 1, 2, 3, 4, or during handling of irradiated fuel.

ACTION:

MODES 1, 2, 3, and 4

- a. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable, restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days and restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With two control room emergency ventilation systems inoperable due to an inoperable control room boundary, restore the control room boundary to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two control room emergency ventilation systems inoperable for reasons other than ACTION d or with two control room emergency air conditioning systems inoperable, enter Specification 3.0.3.

During Handling of Irradiated Fuel

- f. With one control room emergency air conditioning system inoperable, restore the inoperable system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation; otherwise, suspend all activities involving the handling of irradiated fuel.
- g. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation; otherwise, suspend all activities involving the handling of irradiated fuel.

Note 1: The control room boundary may be open intermittently under administrative controls.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION AND AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

- h. With one control room emergency air conditioning system and one control room emergency ventilation system inoperable:
 - 1. restore the inoperable control room emergency ventilation system to OPERABLE status within 7 days or immediately place the control room in the emergency recirc mode of operation, and
 - 2. restore the inoperable control room emergency air conditioning system to OPERABLE status within 30 days or immediately place the OPERABLE system in operation;
 - 3. otherwise, suspend all activities involving the handling of irradiated fuel.
- i. With both control room emergency air conditioning systems or both control room emergency ventilation systems inoperable, immediately suspend all activities involving the handling of irradiated fuel.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

LIMITING CONDITION FOR OPERATION

- 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:
- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system and
 - b. Two separate and independent diesel generators each with:
 1. A day fuel tank containing a minimum volume of 300 gallons of fuel,
 2. A separate fuel storage system, and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

NOTE: Specification 3.0.4.b is not applicable to diesel generators.

- a. With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable, perform the following:
 1. Demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and
 2. Restore the offsite A.C. circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Startup Transformer No. 2 may be removed from service for up to 30 days as part of a preplanned preventative maintenance schedule. The 30-day allowance may be applied not more than once in a 10-year period. The provisions of Specification 3.0.4 are not applicable to Startup Transformer No. 2 during the 30-day preventative maintenance period.

Attachment 4

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List of Regulatory Commitments

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Entergy will establish the Technical Specification Bases for LCO 3.0.4 and SR 4.0.4 as adopted with the applicable license amendment.	To be implemented with amendment		
Entergy will revise Technical Specification Bases for LCO 3.3.4, Pressurizer Safety Valves, to ensure that the summed time of both valves being individually inoperable in Mode 3 does not exceed 18 hours.	To be implemented with amendment		

Attachment 5

2CAN100701

Proposed Technical Specification Bases Changes (mark-up)

APPLICABILITY

BASES (Continued)

If remedial measures permitting limited continued operation of the facility under the provisions of the ACTION requirements are completed, the shutdown may be terminated. The time limits of the ACTION requirements are applicable from the point in time there was a failure to meet a Limiting Condition for Operation. Therefore, the shutdown may be terminated if the ACTION requirements have been met or the time limits of the ACTION requirements have not expired, thus providing an allowance for the completion of the required ACTIONS.

The time limits of Specification 3.0.3 allow 37 hours for the plant to be in the COLD SHUTDOWN MODE condition when a shutdown is required during the POWER OPERATIONS MODE of operation. If the plant is in a lower mode of operation when a shutdown is required, the time limit for reaching the next lower mode of operation applies. However, if a lower mode of operation is reached in less time than allowed, the total allowable time to reach COLD SHUTDOWN or other applicable mode, is not reduced. For example, if HOT STANDBY is reached in 2 hours, the time allowed to reach HOT SHUTDOWN is the next 11 hours because the total time to reach HOT SHUTDOWN is not reduced from the allowable limit of 13 hours. Therefore, if remedial measures are completed that would permit a return to POWER OPERATION, a penalty is not incurred by having to reach a lower mode of operation in less than the total time allowed.

The same principle applies with regard to the allowable outage time limits of the ACTION requirements, if compliance with the ACTION requirements for one specification results in entry into a mode or condition of operation for another specification in which the requirements of the Limiting Condition for Operation are not met. If the new specification becomes applicable in less time than specified, the difference may be added to the allowable outage time limits of the second specification. However, the allowable outage time limits of ACTION requirements for a higher mode of operation may not be used to extend the allowable outage time that is applicable when a Limiting Condition for Operation is not met in a lower mode of operation.

The shutdown requirements of Specification 3.0.3 do not apply in modes 5 and 6, because the ACTION requirements of individual specifications define the remedial measures to be taken.

3.0.4 Establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~allows~~precludes placing the facility in a MODE or other specified condition stated in the Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the LCO would not be met, in accordance with LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.~~the following exist:~~

- ~~a. Unit conditions are such that the requirements of the LCO would not be met in the Applicability desired to be entered and~~
- ~~b. Continued noncompliance with the LCO requirements, if the Applicability were entered, would result in the unit being required to exit the Applicability desired to be entered to comply with the ACTION requirements.~~

LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered permit continued

operation in the MODE or other specified condition in the Applicability for an unlimited period of time. Compliance with ACTION requirements that permit continued operation of the facility for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the plant before or after a MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the ACTION requirements.

APPLICABILITY

BASES (Continued)

LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement 10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed. The risk assessment, for the purposes of LCO 3.0.4.b, must take into account all inoperable TS equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide (RG) 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." RG 1.182 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that the proposed MODE change is acceptable. Consideration should also be given to the probability of completing restoration such that the requirements of the LCO would be met prior to the expiration of Allowable Outage Times (AOTs) that would require exiting the Applicability.

LCO 3.0.4.b may be used with single, or multiple systems and components unavailable. NUMARC 93-01 provides guidance relative to consideration of simultaneous unavailability of multiple systems and components.

The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. The LCO 3.0.4.b risk assessments do not have to be documented.

The TSs allow continued operation with equipment unavailable in MODE 1 for the duration of the AOT. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk of transitioning into and through the applicable MODES or other specified conditions in the Applicability of the LCO, the use of the LCO 3.0.4.b allowance should be generally acceptable, as long as the risk is assessed and managed as stated above. However, there is a small subset of systems and components that have been determined to be more important to risk and use of the LCO 3.0.4.b allowance is prohibited. The LCOs governing these system and components contain Notes prohibiting the use of LCO 3.0.4.b by stating that LCO 3.0.4.b is not applicable.

APPLICABILITY

BASES (Continued)

LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification which states LCO 3.0.4.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACTIONS or to a specific ACTION of a Specification. The risk assessments performed to justify the use of LCO 3.0.4.b usually only consider systems and components. For this reason, LCO 3.0.4.c is typically applied to Specifications which describe values and parameters (e.g., RCS Activity), and may be applied to other Specifications based on NRC plant-specific approval.

The provisions of this specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

The provisions of Specification LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONSs. In addition, the provisions of Specification LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result in any unit shutdown. In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

Upon entry into a MODE or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions until the Condition is resolved, until the LCO is met, or until the unit is not within the Applicability of the Technical Specification.

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 4.0.1. Therefore, utilizing LCO 3.0.4 is not a violation of SR 4.0.1 or SR 4.0.4 for any Surveillances that have not been performed on inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

- 3.0.5** This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

APPLICABILITY

BASES (Continued)

If a Surveillance is not completed within the allowed delay period, then the equipment is considered inoperable or the variable is considered outside the specified limits and the allowed outage times of the required actions for the applicable LCO begin immediately upon expiration of the delay period. If a Surveillance is failed within the delay period, then the equipment is inoperable, or the variable is outside the specified limits and the allowed outage times of the required actions for the applicable LCO begin immediately upon the failure of the Surveillance.

Satisfactory completion of the Surveillance within the delay period allowed by this Specification, or within the allowed outage time of the actions, restores compliance with Specification 4.0.1.

Surveillance Requirements (SRs) do not have to be performed on inoperable equipment because the ACTION requirements define the remedial measures that apply. However, the ~~Surveillance Requirement~~Rs have to be met to demonstrate that inoperable equipment has been restored to OPERABLE status.

4.0.4 establishes the requirement that all applicable surveillances must be met before entry into an ~~OPERATIONAL MODE~~ or other specified condition of operation ~~specified in the Applicability statement~~.

~~The purpose of this specification is to ensure that system and component OPERABILITY requirements and variable or parameter limits are met before entry into a MODE mode or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit/facility. This provision applies to changes in OPERATIONAL MODES or other specified conditions associated with plant shutdown as well as startup. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.~~

A provision is included to allow entry into a MODE or other specified condition in the Applicability when an LCO is not met due to Surveillance not being met in accordance with LCO 3.0.4.

However, in certain circumstances, failing to meet an SR will not result in SR 4.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed, per SR 4.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 4.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 4.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes. SR 4.0.4 does not restrict changing MODES or other specified conditions of the Applicability when a Surveillance has not been performed within the specified Frequency, provided the requirement to declare the LCO not met has been delayed in accordance with SR 4.0.3.

APPLICABILITY

BASES (Continued)

The provisions of SR 4.0.4 shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of SR 4.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown. In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

The precise requirements for performance of SRs are specified such that exceptions to SR 4.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a Surveillance procedure require entry into the MODE or other specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO's Applicability, would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Surveillance may be stated in the form of a Note, as not required (to be met or performed) until a particular event, condition, or time has been reached.

Under the provisions of this specification, the applicable Surveillance Requirements must be performed within the specified surveillance interval to ensure that the Limiting Conditions for Operation are met during initial plant startup or following a plant outage.

When a shutdown is required to comply with ACTION requirements, the provision of Specification 4.0.4 do not apply because this would delay placing the facility in a lower mode of operation.

3/4.4 REACTOR COOLANT SYSTEM

BASES

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

The plant is designed to operate with both reactor coolant loops and associated reactor coolant pumps in operation, and maintain DNBR above the limits specified by Specification 3.2.4 during all normal operations and anticipated transients.

In MODE 3, a single reactor coolant loop provides sufficient heat removal capability for removing decay heat; however, single failure considerations require that two loops be OPERABLE.

In MODES 4 and 5, a single reactor coolant loop or shutdown cooling loop provides sufficient heat removal capability for removing decay heat; but single failure considerations require that at least two loops be OPERABLE. Thus, if the reactor coolant loops are not OPERABLE, this specification requires two shutdown cooling loops to be OPERABLE.

The operation of one Reactor Coolant Pump or one shutdown cooling pump provides adequate flow to ensure mixing, prevent stratification and produce gradual reactivity changes during boron concentration reductions in the Reactor Coolant System. The reactivity change rate associated with boron reductions will, therefore, be within the capability of operator recognition and control.

3/4.4.2 and 3/4.4.3 SAFETY VALVES

The pressurizer code safety valves operate to prevent the RCS from being pressurized above its Safety Limit of 2750 psia. Each safety valve is designed to relieve 453,817 lbs. per hour of saturated steam at 3% overpressure. The relief capacity of a single safety valve is adequate to relieve any overpressure condition which could occur during shutdown.

Two safety valves are required in MODES 1, 2 and 3. One safety valve is required in MODE 4 with $T_c > 220^\circ\text{F}$. For the remainder of MODES 4, 5 and 6 with the reactor vessel head in place, overpressure protection is provided by the operating procedures and LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System".

During operation, all pressurizer code safety valves must be OPERABLE to prevent the RCS from being pressurized above its safety limit of 2750 psia. The combined relief capacity of these valves is sufficient to limit the Reactor Coolant System pressure to within its Safety Limit of 2750 psia following a complete loss of turbine generator load while operating at RATED THERMAL POWER and assuming no reactor trip until the first Reactor Protective System trip setpoint (Pressurizer Pressure-High) is reached (i.e., no credit is taken for a direct reactor trip on the loss of turbine) and also assuming no operation of the steam dump valves.

Demonstration of the safety valves' lift setting will occur only during shutdown and will be performed in accordance with the provisions of Section XI of the ASME Boiler and Pressure Vessel Code.

The ACTION permits the use of the provisions of LCO 3.0.4.c for entry into Mode 3 and suspension of the requirements of ACTION "a" to support testing of one valve at a time for up to 18 hours in Mode 3. ACTION "a" must be entered if the summed time in which each valve is removed from service for testing in Mode 3 exceeds 18 hours. This allowance permits entry into the applicable MODE(s) while relying on the ACTION and suspends the shutdown requirement for a limited period of time to verify proper valve settings prior to startup.

REACTOR COOLANT SYSTEM

BASES

3/4.4.7 CHEMISTRY

The limitations on Reactor Coolant System chemistry ensure that corrosion of the Reactor Coolant System is minimized and reduce the potential for Reactor Coolant System leakage or failure due to stress corrosion. Maintaining the chemistry within the Steady State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady State Limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

3/4.4.8 SPECIFIC ACTIVITY

The limitations on the specific activity of the primary coolant ensure that the resulting 2-hour doses at the site boundary will not exceed an appropriately small fraction of Part 100 limits following a steam generator tube rupture accident in conjunction with an assumed steady state primary-to-secondary steam generator leakage rate of 1.0 GPM and a concurrent loss of offsite electrical power. The values for the limits on specific activity represent interim limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative in that specific site parameters of the Arkansas Nuclear One site, such as site boundary location and meteorological conditions, were not considered in this evaluation. The NRC is finalizing site specific criteria which will be used as the basis for the reevaluation of the specific activity limits of this site. This reevaluation may result in higher limits.

The ACTION statement permitting POWER OPERATION to continue for limited time periods with the primary coolant's specific activity $> 1.0 \mu\text{Ci}/\text{gram}$ DOSE EQUIVALENT I-131, but within the allowable limit shown on Figure 3.4-1, accommodates possible iodine spiking phenomenon which may occur following changes in THERMAL POWER. ACTION "a" permits the use of the provisions of LCO 3.0.4.c. This allowance permits entry into the applicable MODE(s) while relying on the ACTION.

Reducing T_{avg} to $< 500^\circ\text{F}$ prevents the release of activity should a steam generator tube rupture since the saturation pressure of the primary coolant is below the lift pressure of the atmospheric steam relief valves. The surveillance requirements provide adequate assurance that excessive specific activity levels in the primary coolant will be detected in sufficient time to take corrective action. Information obtained on iodine spiking will be used to assess the parameters associated with spiking phenomena. A reduction in frequency of isotopic analyses following power changes may be permissible if justified by the data obtained.

REACTOR COOLANT SYSTEM

BASES

3/4.4.12 LOW TEMPERATURE OVERPRESSURE PROTECTION SYSTEM

Low temperature overpressure protection (LTOP) of the RCS, including the reactor vessel, is provided by redundant relief valves on the pressurizer which discharge from a single discharge header. Each relief valve is isolated from the RCS by two motor operated block valves. Each LTOP relief valve is a direct action, spring-loaded relief valve, with orifice area of 6.38 in² and a lift setting of ≤ 430 psig, and is capable of protecting the RCS from overpressurization from the limiting transient. The relief valves will be able to mitigate (1) the starting of the first reactor coolant pump when the pressurizer water volume is < 910 ft³, and when the secondary water temperature of the steam generator is less than or equal to 100°F above the RCS cold leg temperature (energy addition event), or (2) the simultaneous injection of one HPSI pump and all three charging pumps (mass addition event). The action to prevent the capability of injection of more than one HPSI pump into the RCS will typically be accomplished by placing the HPSI pumps in pull-to-lock. The limiting LTOP design basis event is the energy addition event. The analyses assume that the safety injection tanks (SITs) are either isolated or depressurized such that they are unable to challenge the LTOP relief setpoints.

Since neither the LTOP relief valves nor the RCS vent is analyzed for the pressure transient produced from SIT injection, the LCO requires each SIT that is pressurized to ≥ 300 psig to be isolated. The isolated SITs must have their discharge valves closed and the associated MOV power supply breaker in the open position. The individual SITs may be unisolated when pressurized to < 300 psig. The associated instrumentation uncertainty is not included in the 300 psig value and therefore, the procedural value for unisolating the SITs with the LTOPs in service will be reduced.

The LTOP system, in combination with the RCS heatup and cooldown limitations of LCO 3.4.9.1 and restrictions on RCP operation, provides assurance that the reactor vessel non-ductile fracture limits are not exceeded during the design basis event at low RCS temperatures. These non-ductile fracture limits are identified as LTOP pressure-temperature (P-T) limits, which were specifically developed to provide a basis for the LTOP system. These LTOP P-T limits, along with the LTOP enable temperature, were developed using guidance provided in ASME Code Section XI, Division 1, Code Case N-641. This code case allows using an alternate means of determining LTOP P/T condition but limits "the maximum pressure in the vessel to 100% of the pressure" using the K_{1C} approach allowed by the Code Case.

The enable temperature of the LTOP isolation valves is based on any RCS cold leg temperature reaching 220°F (including a 20°F uncertainty). Although each relief valve is capable of mitigating the design basis LTOP event, both LTOP relief valves are required to be OPERABLE below the enable temperature to meet the single failure criterion of NRC Branch Technical Position RSB 5-2, unless any RCS vent path of 6.38 in² (equivalent relief valve orifice area) or larger is maintained.

A Note prohibits the application of LCO 3.0.4.b to inoperable LTOP relief valves. There is an increased risk associated with entering MODE 4 from MODE 5 with relief valves used for LTOP inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

EMERGENCY CORE COOLING SYSTEMS

BASES

Action "c" addresses the condition in which 100% ECCS flow is not available to either or both of the HPSI and LPSI trains. This action requires restoration of at least one HPSI and one LPSI train to OPERABLE status within one hour. If less than 100% of the ECCS flow equivalent to the ECCS subsystems exists, the commensurate actions of LCO 3.0.3 are entered.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the accident analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements of throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses. The acceptance criteria specified in the Surveillance Requirements for HPSI single pump flow, HPSI differential pressure, and LPSI differential pressure does not account for instrument error.

A Note prohibits the application of LCO 3.0.4.b to an inoperable ECCS subsystem. There is an increased risk associated with entering MODE 4 from MODE 5 with an inoperable ECCS subsystem and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

3/4.5.4 REFUELING WATER TANK (RWT)

The OPERABILITY of the RWT as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS and CSS in the event of a LOCA. The limits on RWT minimum volume and boron concentration ensure that 1) sufficient water is available within containment to permit recirculation cooling flow to the core, and 2) the reactor will remain subcritical in the cold condition following mixing of the RWT and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

The available water volume limits represent the analytically assumed maximum and minimum volume of water that can be transferred from the refueling water tank to containment via the emergency core cooling system and containment spray before pump suction is switched to the sump. An RWT indicated level between 100% and 91.7%, in combination with the RAS setpoint, ensures that the analysis assumptions with respect to available borated water volume are maintained.

The limits on water volume and boron concentration of the boric acid sources, when mixed with the trisodium phosphate, ensures a long term pH value of ≥ 7.0 for the solution recirculated within containment after a LOCA. This pH limit minimizes the evolution of iodine and helps to inhibit stress corrosion cracking of austenitic stainless steel components in containment during the recirculation phase following an accident.

PLANT SYSTEMS

BASES

3/4.7.1.2 EMERGENCY FEEDWATER SYSTEM

The OPERABILITY of the emergency feedwater (EFW) system ensures that the Reactor Coolant System can be cooled down to Shutdown Cooling (SDC) entry conditions from normal operating conditions in the event of a total loss of off-site power.

The EFW system is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at the setpoint of the MSSVs. Subsequently, the EFW system supplies sufficient water to cool the unit to SDC entry conditions, and steam is released through the ADVs.

A Note prohibits the application of LCO 3.0.4.b to an inoperable EFW train. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an EFW train inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

SR 4.7.1.2.b.1 verifies that each EFW pump's developed head at the flow test point is greater than or equal to this required developed head. This test ensures that EFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of pump performance required by Section XI of the ASME Code. Because it is undesirable to introduce cold EFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point that is indicative of pump overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance of inservice testing, discussed in the ASME Code, Section XI, satisfies this requirement. The SR for the turbine driven EFW pump is allowed to be deferred for up to 24 hours after exceeding 700 psia in the steam generators. This allowance will ensure the test is completed within a reasonable period of time after establishing sufficient steam pressure to perform the test.

SR 4.7.1.2.c ensures that EFW can be delivered to the appropriate steam generator, in the event of any accident or transient that generates an EFAS signal. This is assured by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. The 18 month frequency is based on the need to perform the SRs under the conditions that apply during a unit outage and the potential for an unplanned transient if the SRs were performed with the reactor at power.

SR 4.7.1.2.d ensures that the EFW System is properly aligned by verifying the flow path from the condensate storage tank (CST) to each steam generator prior to entering MODE 2 operation, after more than 30 days below MODE 3. OPERABILITY of the EFW flow paths must be verified before sufficient core heat is generated that would require the operation of the EFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgment, and other administrative controls to ensure that flow paths remain OPERABLE. To further ensure EFW System alignment, the OPERABILITY of the flow paths is verified following extended outages to determine that no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source. ACTION requirements are consistent with Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability" and the Revised Standard Technical Specifications (NUREG 1432). The evaluation of a common cause failure (degradation that may affect the OPERABILITY of the remaining diesel generator) should be completed within 24 hours from when the affected diesel generator is determined to be inoperable.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status. Upon loss of a required power source, suspension of core alterations, the handling of irradiated fuel, and activities involving positive reactivity additions act to minimize the probability of the occurrence of postulated events. Suspension of these activities shall not preclude placing fuel assemblies in a safe position.

A Note prohibits the application of LCO 3.0.4.b to an inoperable emergency diesel generator (DG). There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable EDG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies", March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants", Revision 1, August 1977, and Generic Letters 84-15, 93-05, and 94-01. Load Ranges provided in surveillances are allowed to avoid routine overloading of diesel generators. Load in excess of these load ranges for special testing, momentary variation due to changing bus loads, or short term variations shall not invalidate surveillance tests. For the purpose of surveillance testing, the term "standby condition" is defined as the approximate temperature range of the jacket cooling water and engine lube oil sump normally maintained by the engine keep warm system. An exception to this definition is the engine conditions that exist when performing the hot restart test following the 24 hour EDG endurance run. When performing this test, the engine is near normal operating temperature when in a "standby condition". Additionally, this definition includes the allowance to perform engine prelubrication prior to all planned test starts.