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

Duane Arnold Energy Center
Docket No. 50-331
Renewed Facility Operating License No. DPR-49

Supplement to License Amendment Request (TSCR-183): Application to Revise
Technical Specifications for the Permanently Defueled Condition

By letter dated June 20, 2019 (ML19176A356), NextEra Energy Duane Arnold, LLC (NEDA) submitted a request for an amendment to the Operating License (OL) and Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The submittal requested revisions to the OL and TS consistent with the permanent cessation of reactor operation and permanent defueling of the reactor.

Following the submittal, NEDA performed an analysis of a fuel handling accident (FHA) in the spent fuel pool. This analysis determined that, following a decay period of 19 days, Control Building emergency ventilation is not required to maintain FHA dose consequences for control room occupants below the acceptance criteria of 10 CFR 50.67(b)(2)(iii). Consequently, NEDA hereby requests additional changes to the DAEC TS to reflect the revised FHA analysis. Specifically, those Technical Specifications associated with Control Building emergency ventilation are proposed for deletion by this supplemental submittal.

The revisions to the DAEC technical specifications are proposed in accordance with 10 CFR 50.51(b) and 10 CFR 50.36(c)(6).

The Enclosure to this letter provides NEDA's evaluation of the proposed change, as supplemented. Attachment 1 to the enclosure provides markups of the TS showing the proposed changes, as supplemented, and Attachment 2 provides the clean TS pages containing the proposed TS changes, as supplemented. The changes, as supplemented, to the TS Bases are provided for information in Attachment 3 and will be incorporated in accordance with the TS Bases Control Program upon implementation of the approved amendment. These Attachments supersede, in their entirety, the Attachments contained in the June 20, 2019 submittal.

ADD
NRR

NEDA requests approval of the proposed license amendment by October 1, 2020. NEDA requests that the approved amendment, as supplemented, become effective not less than 19 days after plant shutdown and following docketing of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii).

In accordance with 10 CFR 50.91, a copy of this application with enclosures is being provided to the designated State of Iowa official.

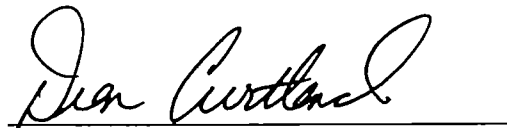
As discussed in the Enclosure, the proposed change, as supplemented, does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change, as supplemented. The DAEC Onsite Review Group has reviewed the proposed license amendment.

The NRC is currently reviewing a supporting licensing action to change the organizational staffing and training requirements contained in DAEC TS Section 1.1, "Definitions" and Section 5.0, "Administration" that was submitted for approval by letter dated April 19, 2019 (ML19109A031). This letter contains no new or revised regulatory commitments.

If you have any questions or require additional information, please contact Michael Davis, Licensing Manager, at 319-851-7032.

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

Executed on September 12, 2019



Dean Curtland
Site Director
NextEra Energy Duane Arnold, LLC

Enclosure

cc: Regional Administrator, USNRC, Region III,
Project Manager, USNRC, Duane Arnold Energy Center
Resident Inspector, USNRC, Duane Arnold Energy Center
A. Leek (State of Iowa)

Enclosure

NEXTERA ENERGY DUANE ARNOLD, LLC
DUANE ARNOLD ENERGY CENTER

NG-19-0102

SUPPLEMENT TO LICENSE AMENDMENT REQUEST (TSCR-183)

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

**NEXTERA ENERGY DUANE ARNOLD, LLC
DUANE ARNOLD ENERGY CENTER**

**Supplement to License Amendment Request (TSCR-183): Application to Revise
Technical Specifications for the Permanently Defueled Condition**

EVALUATION OF PROPOSED CHANGE

- 1.0 Summary Description
- 2.0 Detailed Description
- 3.0 Technical Evaluation
- 4.0 Regulatory Evaluation
 - 4.1 Applicable Regulatory Requirements/Criteria
 - 4.2 Precedent
 - 4.3 No Significant Hazards Consideration
 - 4.4 Conclusions
- 5.0 Environmental Considerations
- 6.0 References

Attachment 1 – Proposed Technical Specification Changes (Mark-Up)

Attachment 2 – Revised Technical Specification Pages (Clean, with Proposed Changes)

Attachment 3 – Proposed Technical Specification Bases Changes (Mark-Up)

1.0 SUMMARY DESCRIPTION

By letter dated June 20, 2019 (Reference 1), NextEra Energy Duane Arnold, LLC (NEDA) submitted a request for an amendment to the Operating License (OL) and Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The submittal requested revisions to the OL and TS consistent with the permanent cessation of reactor operation and permanent defueling of the reactor. The revised TS will be identified as the DAEC Post Defueled Technical Specifications (PDTS).

Currently, UFSAR Chapter 15.2 describes the FHA as occurring when a fuel bundle and the refueling mast detach from the refueling bridge and drop onto the reactor vessel core. After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed, in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. Consequently, a fuel handling accident at DAEC will be limited to a fuel handling accident within the Spent Fuel Pool (SPF).

Following the June 20, 2019 submittal, NEDA performed an analysis of a fuel handling accident (FHA) in the spent fuel pool. This analysis determined that, following a decay period of 19 days, Control Building emergency ventilation is not required to maintain FHA dose consequences for control room occupants below the acceptance criteria of 10 CFR 50.67(b)(2)(iii). Consequently, NEDA hereby requests supplemental changes to the DAEC TS to reflect the revised FHA analysis. Specifically, those Technical Specifications associated with Control Building emergency ventilation are proposed for deletion by this supplemental submittal.

The proposed supplemental changes to the DAEC TS are in accordance with 10 CFR 50.36(c)(1) through (c)(5). The proposed supplemental changes also include administrative changes to content format and revised page numbering. The TS Table of Contents will be revised accordingly.

The current DAEC TS contain limiting conditions for operation (LCOs) that provide for appropriate functional capability of equipment required for safe operation of the facility, including safe storage and management of irradiated fuel. Since the safety function related to safe storage and management of irradiated fuel at an operating plant is similar to the corresponding function at a permanently defueled facility, the existing TS related to the SFP provide an appropriate level of control. LCOs and associated surveillance requirements (SRs) that are not required to mitigate the consequences of the Fuel Handling Accident in the SFP are being proposed for deletion.

In the development of the proposed PDTS changes, NEDA reviewed PDTS requirements from other plants that have permanently shut down, as listed in Section 4.2, Precedent.

In accordance with the revised FHA analysis, the proposed changes, as supplemented, would become effective no less than 19 days after plant shutdown and following docketing of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii).

Related Licensing Actions

By letter dated April 19, 2019 (Reference 2), NEDA submitted a License Amendment Request (LAR) proposing changes to the organization, staffing and training requirements contained in TS Section 1.1, "Definitions" and Section 5.0, "Administration" that complements and supports this request.

2.0 DETAILED DESCRIPTION

The proposed supplemental change is requested as a result of NEDA's formally-stated intention to permanently cease power operation at DAEC in the fourth quarter of 2020, to transfer all fuel in the reactor to the Spent Fuel Pool (SFP) soon thereafter, and is in accordance with the revised FHA analysis. The proposed amendment, as supplemented, revises the DAEC TS for a permanently defueled and shutdown condition where the only credible Design Basis Accident (DBA) is an FHA in the SFP. To support the proposed changes, NEDA has reevaluated the consequences of an FHA in the SFP of the permanently shut down and defueled DAEC. The revised FHA analysis provides the framework and basis for the proposed supplemental changes.

Design Basis Accident Analyses Applicable to Proposed Change

As discussed in the June 20, 2019 submittal, with the termination of reactor operations at DAEC and the permanent removal of fuel from the reactor as certified in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the majority of the DBA scenarios postulated in the UFSAR will no longer be possible. During decommissioning, the irradiated fuel will be stored in the Spent Fuel Pool (SFP) or the Independent Spent Fuel Storage Installation (ISFSI) until it is shipped offsite in accordance with the schedule to be provided in the Post Shutdown Decommissioning Activities Report (PSDAR) and the Spent Fuel Management Plan. With the reactor permanently shut down and defueled, the only remaining credible DBA is the FHA occurring in the SFP.

Fuel Handling Accident Analysis for the Permanently Shut Down and Defueled Condition

Summary

On April 16, 2001, the NRC issued License Amendment 237 to the OL and TS of DAEC. The amendment implemented an alternative source term (AST) per 10 CFR 50.67 to perform the radiological consequence analysis of the design-basis FHA to support changes to the TS (Reference 3). The analysis of the FHA that supported these changes assumed the FHA occurred over the reactor core 60 hours after reactor shutdown from full power and assumed Control Building emergency ventilation functions to mitigate dose consequences to control room occupants. The analysis did not credit secondary containment, secondary containment isolation or filtration by the Standby Gas Treatment (SBGT) System.

With respect to dose consequences for control room occupants, the acceptance criteria for an FHA, as found in 10 CFR 50.67(b)(2)(iii) is:

Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.

After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident and an FHA over the SFP becomes the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. This analysis did not credit secondary containment, secondary containment isolation or filtration by the SBGT System. This analysis determined that, following a 19-day decay period, Control Building emergency ventilation (CBEV) is not required to maintain dose consequences for control room occupants within the criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment are proposed for deletion.

Methods and Assumptions

Consistent with the DAEC UFSAR Chapter 15.2, the revised FHA analysis uses the Alternate Source Term (AST) Methodology from Regulatory Guide 1.183.

3.0 TECHNICAL EVALUATION

The following tables identify each section that is proposed to be changed by this supplement, the proposed changes and the basis for each change. TS sections proposed for revision in the June 20, 2019 submittal that are unchanged by this supplement, are indicated as such in bold text. Proposed additions are shown using red underline and deletions are shown using red strikethrough.

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Attachment 1 provides the marked-up version of the DAEC TS. This marked-up version supersedes, in its entirety, Attachment 1 of the June 20, 2019 submittal. The following administrative changes are not shown in the marked-up TS and TS Bases pages because they do not affect the technical content of the TS:

- Reformatting (margins, font, tables, line spacing, etc.) content to create a continuous electronic file;
- Renumbering of pages, where appropriate, to condense and reduce the number of pages; and
- Revisions to the TS Table of Contents.

Attachment 2 provides the re-typed affected PDTs pages, these pages supersede those provided in Attachment 2 of the June 20, 2019 submittal.

The markups of the TS Bases, provided in Attachment 3, are provided for information only. Markups of TS Bases sections that are deleted in their entirety are not included in Attachment 3. Similarly, Attachment 3 supersedes, in its entirety, Attachment 3 of the June 20, 2019 submittal.

TECHNICAL SPECIFICATIONS	
TS SECTION 1.1, DEFINITIONS	
TS 1.1, "Definitions," provides defined terms that are applicable throughout the TS and TS Bases. In addition to the defined terms deleted in the June 20, 2019 submittal, a number of additional Definitions are proposed to be deleted because they have no relevance to and no longer apply to the PDTS.	
CHANNEL CALIBRATION	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
CHANNEL CHECK	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
CHANNEL CHECK FUNCTIONAL TEST	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
DOSE EQUIVALENT I-131	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
LOGIC SYSTEM FUNCTIONAL TEST	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
OPERABLE - OPERABILITY	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
TS Section 1.2 LOGICAL CONNECTORS	
TS 1.2 explains the meaning of logical connectors, including several illustrative examples.	
<u>Current</u> 1.2 Logical Connectors	<u>Proposed</u> 1.2 Deleted Logical Connectors
Basis	
After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, after a 19-day decay period, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. This LCO has a single Condition prompting a single Action and does not use logical connectors, which obviates the need for the explanatory text and examples in Section 1.2.	

TS Section 1.3 COMPLETION TIMES	
<p>TS 1.3 establishes the Completion Time convention and provides guidance for its use, including several illustrative examples. The changes presented below supersede those proposed in the June 20, 2019 submittal.</p>	
<p><u>Current</u> BACKGROUND Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).</p> <p>DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.</p>	<p><u>Proposed</u> BACKGROUND Limiting Conditions for Operation (LCOs) specify minimum requirements for <u>safely maintaining</u> ensuring safe operation of the unit <u>facility</u>. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).</p> <p>DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the <u>unit facility</u> is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the <u>unit facility</u> is not within the LCO Applicability.</p> <p>Remaining DESCRIPTION text and Examples 1.3-1 through 1.3-7 are proposed for deletion.</p>

Basis	
<p>After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, following a 19-day decay period, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. This LCO has a REQUIRED ACTION to suspend fuel movement in the secondary containment with a COMPLETION TIME of Immediately, which obviates the need for much of the explanatory text and examples in Section 1.3.</p>	
TS Section 1.4 Frequency	
<p>TS Section 1.4 defines the proper use and application of Frequency requirements, including several illustrative examples. The changes presented below supersede those proposed in the June 20, 2019 submittal.</p>	
Current DESCRIPTION	Proposed DESCRIPTION
<p>Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.</p> <p>The “specified Frequency” is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The “specified Frequency” consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.</p> <p>Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are “otherwise stated” conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both.</p>	<p>Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.</p> <p>The “specified Frequency” is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The “specified Frequency” consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.</p> <p>Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are “otherwise stated” conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both.</p>

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria. Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:

- a. The Surveillance is not required to be met in the MODE or other specified condition to be entered; or

~~Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.~~

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- ~~a. The Surveillance is not required to be met in the MODE or other specified condition to be entered; or~~

b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or

c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discusses these special situations.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement

~~b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or~~

~~c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.~~

~~Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discusses these special situations.~~

EXAMPLES

The following examples illustrates the manner in which various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
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Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement

of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Examples 1.4-3 and 1.4-4), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

- EXAMPLE 1.4-2
- EXAMPLE 1.4-3
- EXAMPLE 1.4-4
- EXAMPLE 1.4-5
- EXAMPLE 1.4-6

of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the ~~unit~~ facility is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the ~~unit~~ facility is in a ~~MODE or other~~ specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to ~~Examples 1.4-3 and 1.4-4~~), then SR 3.0.3 becomes applicable.

~~If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.~~

- EXAMPLE 1.4-2 is proposed for deletion
- EXAMPLE 1.4-3 is proposed for deletion
- EXAMPLE 1.4-4 is proposed for deletion
- EXAMPLE 1.4-5 is proposed for deletion
- EXAMPLE 1.4-6 is proposed for deletion

Basis

After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, following a 19-day decay period, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. This LCO has an SR to check SFP level on a Frequency in accordance with the Surveillance Frequency Control Program (SFCP). This straight forward Frequency obviates the need for much of the explanatory text and examples in Section 1.4.

<p>TS Section 2.0 SAFETY LIMITS (SLs)</p> <p>Changes proposed in the June 20, 2019 submittal are unchanged by this supplement.</p>	
<p>TS 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY</p>	
<p>TS 3.0, "Limiting Condition for Operation (LCO) Applicability," establishes the general requirements applicable to all Specifications and applies at all times, unless otherwise stated. After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, following a 19-day decay period, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. Consequently, some LCOs are no longer applicable and some must be revised to reflect the permanently defueled condition.</p>	
<p>Changes proposed to LCO 3.0.1 in the June 20, 2019 submittal are unchanged by this supplement.</p>	
<p>Current TS LCO 3.0.2</p> <p>Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.</p> <p>If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.</p>	<p>Proposed TS LCO 3.0.2 (These changes supersede those made in the June 20, 2019 submittal.) Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.</p> <p>If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.</p>
<p>Basis</p>	
<p>Deletion of LCO 3.0.5 was proposed in the June 20, 2019 submittal. Deletion of LCO 3.0.6 is discussed later. The second paragraph of LCO 3.0.2 allows flexibility in Completion Time(s) of Required Action(s). It is not anticipated that this flexibility will be needed once the DAEC is permanently shut down and defueled and these TS changes become effective.</p>	
<p>LCO 3.0.3 proposed for deletion in the June 20, 2019 submittal, this is unchanged by this supplement.</p>	

<p>Current TS LCO 3.0.4</p> <p>When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:</p> <ul style="list-style-type: none"> 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. <p>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.</p>	<p>Proposed TS LCO 3.0.4 – Deleted. (These changes supersede those made in the June 20, 2019 submittal.)</p>
<p>Basis</p>	
<p>This LCO allows flexibility in changes in MODES or other specified conditions when an LCO is not met. It is not anticipated that this flexibility will be needed once the DAEC is permanently shut down and defueled and these TS changes become effective.</p>	
<p>LCO 3.0.5 was proposed for deletion in the June 20, 2019 submittal, this is unchanged by this supplement.</p>	

<p>Current TS LCO 3.0.6</p> <p>When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.11, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.</p> <p>When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.</p>	<p>Proposed TS LCO 3.0.6 – Deleted.</p>
<p>Basis</p>	
<p>This LCO establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the TS. It is not anticipated that this exception will be needed once the DAEC is permanently shut down and defueled and this TS becomes effective.</p>	
<p>LCO 3.0.7 was proposed for deletion in the June 20, 2019 submittal, this is unchanged by this supplement.</p>	
<p>LCO 3.0.8 was proposed for deletion in the June 20, 2019 submittal, this is unchanged by this supplement.</p>	

Current TS LCO 3.0.9

When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.

For the purposes of this specification, the High Pressure Coolant Injection system, the Reactor Core Isolation Cooling system, and the Automatic Depressurization System are considered independent subsystems of a single system.

If the required OPERABLE train or subsystem becomes inoperable while this specification is in use, it must be restored to OPERABLE status within 24 hours or the provisions of this specification cannot be applied to the trains or subsystems supported by the barriers that cannot perform their related support function(s).

At the end of the specified period, the required barriers must be able to perform their related support function(s) or the supported system LCO (s) shall be declared not met.

Proposed TS LCO 3.0.9 – Deleted.
(These changes supersede those made in the June 20, 2019 submittal.)

Basis	
<p>LCO 3.0.9 establishes conditions under which systems described in the TS are considered to remain OPERABLE when required barriers are not capable of providing their related support function(s). After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, no less than 19 days after shutdown, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. There are no required barriers for this remaining TS.</p>	
<p>Changes to SR 3.0.1 proposed in the June 20, 2019 submittal are not impacted by this supplement.</p>	
<p>Current TS SR 3.0.2</p> <p>The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.</p> <p>For Frequencies specified as “once,” the above interval extension does not apply.</p> <p>If a Completion Time requires periodic performance on a “once per . . .” basis, the above Frequency extension applies to each performance after the initial performance.</p> <p>Exceptions to this Specification are stated in the individual Specifications.</p>	<p>Proposed TS SR 3.0.2</p> <p>The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.</p> <p>For Frequencies specified as “once,” the above interval extension does not apply.</p> <p>If a Completion Time requires periodic performance on a “once per . . .” basis, the above Frequency extension applies to each performance after the initial performance.</p> <p>Exceptions to this Specification are stated in the individual Specifications.</p>
Basis	
<p>SR 3.0.2 permits a 25% extension of the interval specified in the Frequency of TS Surveillances. This extension facilitates Surveillance scheduling and considers conditions that may not be suitable for conducting the Surveillance. Discussion of specific Completion Times performed on a “once per...” basis and exceptions to this Specification are deleted. After the certifications required by 10 CFR 50.82(a)(1) are docketed for DAEC, the 10 CFR Part 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). DAEC will have spent fuel in the SFP and, following a 19-day decay</p>	

period, the only required LCO will be 3.7.8, Spent Fuel Pool Level Indication. The deleted scenario and exception will not be needed once the DAEC is permanently shut down and defueled and this TS becomes effective.

SR 3.0.3 is not impacted by either the June 20, 2019 submittal or this supplement.

<p>Current TS SR 3.0.4</p> <p>Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. 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.</p> <p>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.</p>	<p>Proposed TS SR 3.0.4 (These changes supercede those made in the June 20, 2019 submittal.)</p> <p>Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. 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.</p> <p>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.</p>
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Basis

This SR is revised to remove references to MODES and plant shutdown, neither of which apply to the DAEC in the permanently defueled condition. Additionally, reference to LCO 3.0.4 is removed, deletion of LCO 3.0.4 is discussed earlier.

Changes to TS Sections 3.1 through 3.3.6.3, proposed in the June 20, 2019 submittal, are unchanged by this supplement. TS Section 3.3 page 1 markup is revised to reflect the deletion of 3.3.7.1 and 3.3.8.1.

<p><u>Current</u> TS 3.3.7.1 – Standby Filter Unit (SFU) Instrumentation</p>	<p><u>Proposed</u> TS 3.3.7.1 – Standby Filter Unit (SFU) Instrumentation to be deleted.</p>
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Basis

The SFU System is designed to provide a radiologically controlled environment to ensure the habitability of the control room for the safety of control room operators under

all plant conditions including design basis accidents.

TS 3.3.7.1, "Standby Filter Unit (SFU) Instrumentation," ensures automatic action to pressurize the control building envelope to minimize the consequences of radioactive material in the control building envelope.

After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident. An FHA in the spent fuel pool is the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. This FHA analysis determined that, following a 19-day decay period, Control Building Emergency Ventilation (CBEV) is not required to maintain dose consequences for control room occupants within the criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment, specifically, SFU Instrumentation, are proposed for deletion.

With the TS section above deleted, the corresponding TS Bases will also be deleted. Since it is deleted in its entirety, TS Bases section 3.3.7.1 is not included in Attachment 3.

<p><u>Current</u> TS 3.3.8.1 – Loss of Power (LOP) Instrumentation</p>	<p><u>Proposed</u> TS 3.3.8.1 – Loss of Power (LOP) Instrumentation to be deleted.</p>
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Basis

TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," monitors the 4.16 KV emergency bus voltages and the Startup and Standby Transformer secondary winding voltages. This monitoring ensures that if insufficient power is available, the buses are disconnected from the offsite power sources and connected to the onsite Diesel Generator (DG) power sources.

After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident. An FHA in the spent fuel pool is the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. This FHA analysis determined that, following a 19-day decay period, Control Building Emergency Ventilation (CBEV) is not required to maintain dose consequences for control room occupants within the criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment, specifically, LOP Instrumentation, are proposed for deletion.

With the TS section above deleted, the corresponding TS Bases will also be deleted. Since it is deleted in its entirety, TS Bases section 3.3.8.1 is not included in Attachment 3.

Changes to 3.4, 3.5, and 3.6, proposed in the June 20, 2019 submittal, are unchanged by this supplement.

TS SECTION 3.7 PLANT SYSTEMS

Changes to 3.7.1 through 3.7.3 and 3.7.6 through 3.7.9, proposed in the June 20, 2019 submittal, are unchanged by this supplement.

Current

TS 3.7.4 – Standby Filter Unit (SFU) System
 TS 3.7.5 – Control Building Chiller (CBC) System

Proposed

(These changes supersede those made in the June 20, 2019 submittal.)

TS 3.7.4 – Deleted

TS 3.7.5 – Deleted

Basis

TS 3.7, "Plant Systems," contains LCOs that provide for appropriate control of process variables, design features, or operating restrictions needed for appropriate functional capability of equipment required for safe operation of the facility.

TS 3.7.4, "Standby Filter Unit (SFU) System," is applicable in MODES 1, 2, and 3, during movement of irradiated fuel assemblies in the secondary containment, and during CORE ALTERATIONS. The SFU System provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals or smoke. Specifically, the SFU System provides emergency treatment of outside supply air and a Control Building Envelope (CBE) boundary that limits the inleakage of unfiltered air.

TS 3.7.5, "Control Building Chiller (CBC) System," is applicable in MODES 1, 2, and 3, during movement of irradiated fuel assemblies in the secondary containment, and during CORE ALTERATIONS. The CBC System provides temperature control for the control building HVAC system under both normal and accident conditions.

After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident. An FHA in the spent fuel pool is the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. This FHA analysis determined that, following a 19-day decay period, Control Building Emergency Ventilation (CBEV) is not required to maintain dose consequences for control room occupants within the criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment, specifically SFU and CBC Systems, are proposed for deletion.

With the TS sections above deleted, the corresponding TS Bases will also be deleted. Since they are deleted in their entirety, TS Bases sections 3.7.4 and 3.7.5 are not included in Attachment 3.

TS SECTION 3.8 ELECTRICAL POWER SYSTEMS

TS 3.8.1, 3.8.4 and 3.8.7 were proposed for deletion in the June 20, 2019 submittal. This is unchanged by this supplement, however, they have been marked up to reflect deletion of Section 3.8.

Current

TS 3.8.2 – AC Sources – Shutdown
TS 3.8.3 – Diesel Fuel Oil, Lube Oil, and Starting Air
TS 3.8.5 – DC Sources – Shutdown
TS 3.8.6 – Battery Cell Parameters
TS 3.8.8 – Distribution Systems – Shutdown

Proposed

(These changes supersede those made in the June 20, 2019 submittal.)

TS 3.8.2 – Deleted
TS 3.8.3 – Deleted

TS 3.8.5 – Deleted
TS 3.8.6 – Deleted
TS 3.8.8 – Deleted

Basis

TS 3.8, "Electrical Power Systems," contains LCOs that provide for appropriate functional capability of plant electrical equipment required for safe operation of the facility. The TS are proposed for deletion.

TS 3.8.2, "AC Sources – Shutdown," is applicable in MODES 4 and 5, and during movement of irradiated fuel assemblies in the secondary containment. The AC Electrical Power System ensures an available source of power to the Engineered Safety Feature (ESF) Systems via essential buses 1A3 and 1A4.

TS 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," is applicable when the associated diesel generator is required to be operable. These systems ensure proper operation of the EDGs by maintaining the quality of the fuel and lube oils and adequate starting air capacity.

TS 3.8.5, "DC Sources – Shutdown," is applicable in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment. The DC Electrical Power System provides the AC Emergency Power System with control power. It also provides both motive and control power to selected safety related equipment.

TS 3.8.6, "Battery Cell Parameters," is applicable when associated DC electrical power subsystems are required to be OPERABLE. The battery cell parameter requirements ensure availability of the required DC power to maintain the facility in a safe condition

after a postulated FHA.

TS 3.8.8, "Distribution Systems – Shutdown," is applicable in MODES 4 and 5, and during movement of irradiated fuel assemblies in the secondary containment. The AC and DC Electrical Power Distribution Systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF Systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded

The above TS are related to assuring the appropriate functional capability of plant equipment, and control of process variables, design features, or operating restrictions required for safe operation of the facility only when the reactor is in MODES 1 through 3. After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident. An FHA in the spent fuel pool is the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. The analysis found dose consequences to be within the criteria of 10 CFR 50.67(b)(2). This FHA analysis did not credit Control Building Emergency Ventilation (CBEV) to maintain dose consequences for control room occupants within the criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment are proposed for deletion.

With the TS sections above deleted, the corresponding TS Bases will also be deleted. Since they are deleted in their entirety, TS Bases sections 3.8.2, 3.8.3, 3.8.5, 3.8.6 and 3.8.8 are not included in Attachment 3.

Changes proposed to 3.9, 3.10 and 4.0 in the June 20, 2019 submittal, are unchanged by this supplement.

TS Section 5.5 Programs and Manuals

This section provides a description and requirements regarding programs and manuals that are to be established, implemented, and maintained. TS 5.5 will remain applicable once the reactor is permanently shut down and defueled. As such, it is proposed to be retained and revised to reflect the permanently defueled condition as described below.

The deletions proposed below are in addition to the deletions proposed in the June 20, 2019 submittal.

<u>Current TS</u>	<u>Basis for Change</u>
<p>TS 5.5.7 Ventilation Filter Testing Program (VFTP)</p>	<p>TS 5.5.7 will be deleted.</p> <p>This program was established to implement required testing of Engineered Safety Feature (ESF) filter ventilation systems. Those ESF systems included the SBGT System and the SFU System.</p> <p>Once the DAEC is permanently shut down and defueled, and 19 days of decay have elapsed, these systems are no longer required to mitigate the consequences of an FHA. The TS associated with the SBGT System and the SFU System, therefore, have been deleted. This obviates the need for a filter testing program for these systems.</p>
<p>TS 5.5.9 Diesel Fuel Oil Testing Program</p>	<p>TS 5.5.8 will be deleted.</p> <p>This program ensures acceptability of both new fuel oil and stored fuel oil.</p> <p>Once the DAEC is permanently shut down and defueled, and 19 days of decay have elapsed, the SBDGs are no longer required to mitigate the consequences of an FHA. The TS associated with the SBDGs and SBDG fuel, therefore, have been deleted. This obviates the need for a fuel oil testing program.</p>
<p>TS 5.5.11 Safety Function Determination Program (SFDP)</p>	<p>TS 5.5.11 will be deleted.</p> <p>This program ensures that any loss of safety function is detected and appropriate actions are taken.</p> <p>Once the DAEC is permanently shut down</p>

	<p>and defueled, and 19 days of decay have elapsed, the only required TS LCO will be TS 3.7.8, "Spent Fuel Pool Level Indication." TS 3.7.8 is not included in the SFDP and all TS included in the SFDP are proposed for deletion after the DAEC is permanently shut down, defueled and 19 days of decay have elapsed. Therefore, this program is no longer necessary at DAEC.</p>
<p>TS 5.5.13 Control Building Envelope Habitability Program</p>	<p>TS 5.5.13 will be deleted.</p> <p>The Control Building Envelope (CBE) Habitability Program ensures that the CBE habitability is maintained.</p> <p>Once the DAEC is permanently shut down and defueled, and 19 days of decay have elapsed, the CBE is no longer required to mitigate the consequences of an FHA. The TS associated with maintaining the CBE have been deleted. This obviates the need for a program to ensure CBE habitability is maintained.</p>
<p>Changes proposed to 5.6 in the June 20, 2019 submittal, are unchanged by this supplement.</p>	

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The proposed changes, as supplemented, have been evaluated to determine whether applicable regulations and requirements continue to be met. NextEra Energy Duane Arnold, LLC (NEDA) has determined that the proposed changes, as supplemented, do not require any exemptions or relief from regulatory requirements.

4.1.1 10 CFR 50.82, Termination of License

The portions of 10 CFR 50.82 providing the basis for this license amendment request (LAR) are:

- (a) For power reactor licensees—

- (1) (i) When a licensee has determined to permanently cease operations the licensee shall, within 30 days, submit a written certification to the NRC, consistent with the requirements of § 50.4(b)(8);
- (ii) Once fuel has been permanently removed from the reactor vessel, the licensee shall submit a written certification to the NRC that meets the requirements of § 50.4(b)(9) and;
- (2) Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

By letter dated January 18, 2019 (Accession No. ML19023A196), NEDA provided formal notification to the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.82(a)(1)(i) and 10 CFR 50.4(b)(8) of the intention to permanently cease power operations at the DAEC in the fourth quarter of 2020.

After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed, in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result, DAEC will be authorized only to possess special nuclear material.

4.1.2 10 CFR 50.36 Technical Specifications

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of the TS.

10 CFR 50.36(c)(6) Decommissioning states:

This paragraph applies only to nuclear power reactor facilities that have submitted the certifications required by § 50.82(a)(1) and to non-power reactor facilities which are not authorized to operate. Technical specifications involving safety limits, limiting safety system settings, and limiting control system settings; limiting conditions for operation; surveillance requirements; design features; and administrative controls will be developed on a case-by-case basis.

After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed, in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result, DAEC will be authorized only to possess special nuclear material. After the reactor has been completely defueled following permanent shut down, an FHA over the reactor core is no longer a credible accident and an FHA over the SFP becomes the bounding accident. NEDA has performed a revised analysis for an FHA in the SFP. This analysis determined that, following a decay period of 19 days, Control Building emergency ventilation is not required to maintain FHA dose consequences for control room occupants below the acceptance criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment are proposed for deletion. This proposed amendment, as supplemented, modifies the remaining TS to correspond to the permanently shut down condition.

4.1.3 10 CFR 50.51, Continuation of License

10 CFR 50.51(b) states:

Each license for a facility that has permanently ceased operations, continues in effect beyond the expiration date to authorize ownership and possession of the production or utilization facility, until the Commission notifies the licensee in writing that the license is terminated. During such period of continued effectiveness the licensee shall:

- (1) Take actions necessary to decommission and decontaminate the facility and continue to maintain the facility, including, where applicable, the storage, control and maintenance of the spent fuel, in a safe condition, and
- (2) Conduct activities in accordance with all other restrictions applicable to the facility in accordance with the NRC regulations and the provisions of the specific 10 CFR part 50 license for the facility.

4.1.4 10 CFR 50.46, Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Reactors

10 CFR 50.46(a)(1)(i) states "This section does not apply to a nuclear power reactor facility for which the certifications required under §50.82(a)(1) have been submitted."

4.1.5 10 CFR 50.62, Requirements for Reduction of Risk from Anticipated Transients without Scram (ATWS) Events for Light-Water-Cooled Nuclear Power Plants

10 CFR 50.62(a) states "The requirements of this section apply to all commercial lightwater-cooled nuclear power plants, other than nuclear power reactor facilities for which the certifications required under §50.82(a)(1) have been submitted."

4.2 Precedent

The proposed changes, as supplemented, are largely consistent with the Post Defueled Technical Specifications currently in effect for the permanently shut down and defueled Vermont Yankee Nuclear Power Station (ML15117A551), Crystal River Nuclear Plant, Unit 3 (Accession No. ML15224B286), San Onofre Nuclear Generating Station, Units 2 and 3 (ML15139A390), Kewaunee Power Stations (ML14237A045), and Fort Calhoun Station Unit 1 (ML18010A087).

4.3 No Significant Hazards Consideration

NextEra Energy Duane Arnold, LLC (NEDA), pursuant to 50.90, requests an amendment to the Duane Arnold Energy Center (DAEC) Technical Specifications (TS). The proposed changes, as supplemented, will revise or delete TS consistent with the permanent cessation of reactor operation, permanent defueling of the reactor, and consistent with the revised analysis for a FHA in the SFP. The TS requirements being changed would be applicable once it has been certified that all fuel has been permanently removed from the DAEC reactor in accordance with 10 CFR 50.82(a)(1)(ii) and a period of no less than 19 days has transpired since shutdown.

Once the final certification is submitted documenting the permanent cessation of operations and permanent fuel removal, the 10 CFR 50 license for DAEC no longer will authorize operation of the reactor or placement of fuel in the reactor vessel, in accordance with 10 CFR 50.82(a)(2).

NEDA has evaluated whether a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed changes, as supplemented, would not take effect until DAEC has certified to the NRC that it has permanently ceased operation, entered a permanently defueled condition, and a period of 19 days has transpired since shutdown. Because the 10 CFR Part 50 license for DAEC will no longer authorize operation of the reactor, or emplacement or retention of fuel into the reactor vessel with the certifications required by 10 CFR Part 50.82(a)(1) submitted, as specified in 10 CFR Part 50.82(a)(2), the occurrence of postulated accidents associated with reactor operation is no longer credible. DAEC's accident analyses are contained in Chapter 15 of the Updated Final Safety Analysis Report (UFSAR). In a permanently defueled condition, the only credible UFSAR described accident that remains is the Fuel Handling Accident (FHA). Other Chapter 15 accidents will no longer be applicable to a permanently defueled reactor.

The UFSAR-described FHA analyses for DAEC shows that, provided the SFP water level requirement of TS LCO 3.7.8 is met, the dose consequences are acceptable without relying on secondary containment or the Standby Gas Treatment System.

Once the DAEC has permanently shut down and defueled, the only credible FHA is a fuel drop in the SFP. NEDA performed an analysis of the SFP FHA. This analysis determined that, following a decay period of 19 days, Control Building emergency ventilation is not required to maintain FHA dose consequences for control room occupants below the acceptance criteria of 10 CFR 50.67(b)(2)(iii). Consequently, the TS requirements for the systems supporting the Control Building emergency ventilation are proposed for deletion.

The probability of occurrence of previously evaluated accidents is not increased, since safe storage and handling of fuel will be the only operations performed, and therefore, bounded by the existing analyses. Additionally, the occurrence of postulated accidents associated with reactor operation will no longer be credible in the permanently defueled

condition. This significantly reduces the scope of applicable accidents. The deletion of TS definitions and rules of usage and application requirements that will not be applicable in a defueled condition has no impact on facility SSCs or the methods of operation of such SSCs. The deletion of design features and safety limits not applicable to the permanently shut down and defueled DAEC has no impact on the remaining applicable DBA.

The removal of LCOs or SRs that are related only to the operation of the nuclear reactor or only to the prevention, diagnosis, or mitigation of reactor-related transients or accidents do not affect the applicable DBAs previously evaluated since these DBAs are no longer applicable in the permanently defueled condition.

Therefore, the proposed change, as supplemented, does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed changes, as supplemented, to delete or modify certain DAEC TS, and current licensing bases (CLB) have no impact on facility SSCs affecting the safe storage of spent irradiated fuel, or on the methods of operation of such SSCs, or on the handling and storage of the spent irradiated fuel itself. The removal of TS that are related only to the operation of the nuclear reactor, or only to the prevention, diagnosis, or mitigation of reactor related transients or accidents, cannot result in different or more adverse failure modes or accidents than previously evaluated because the reactor will be permanently shut down and defueled.

The proposed modification or deletion of requirements of the DAEC TS, and CLB do not affect systems credited in the accident analysis for the remaining credible DBA at DAEC. The proposed TS will continue to require proper control and monitoring of safety significant parameters and activities. The TS regarding SFP water level is retained to preserve the current requirements for safe storage of irradiated fuel. The proposed amendment, as supplemented, does not result in any new mechanisms that could initiate damage to the remaining relevant safety barriers for defueled plants (fuel cladding, spent fuel racks, SFP integrity, and SFP

water level). Since extended operation in a defueled condition and safe fuel handling will be the only operation allowed, and therefore bounded by the existing analyses, such a condition does not create the possibility of a new or different kind of accident.

Therefore, the proposed change, as supplemented, does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed changes, as supplemented, are to delete or modify certain TS and CLB once the DAEC facility has been permanently shut down and defueled and a period of no less than 19 days has transpired since shutdown. As specified in 10 CFR 50.82(a)(2), the 10 CFR 50 license for DAEC will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel following submittal of the certifications required by 10 CFR 50.82(a)(1). As a result, the occurrence of certain design basis postulated accidents are no longer considered credible when the reactor is permanently defueled.

The only remaining credible UFSAR described accident is a FHA. Further, an FHA in the reactor core is no longer credible. An FHA in the SFP is the only remaining credible accident. NEDA has performed a revised analysis for an FHA in the SFP. This analysis determined that, following a decay period of 19 days, Control Building emergency ventilation is not required to maintain FHA dose consequences for control room occupants below the acceptance criteria of 10 CFR 50.67(b)(2)(iii). Consequently, TS LCOs and SRs associated with CBEV and support equipment are proposed for deletion. The proposed changes, as supplemented, do not adversely affect the inputs or assumptions of the revised FHA analysis.

The proposed changes, as supplemented, are limited to those portions of the TS, and CLB that are not related to the safe storage of irradiated fuel. The requirements proposed to be revised or deleted from the TS, and CLB are not credited in the existing accident analysis for the remaining postulated accident (i.e., FHA in the SFP); and, as such, do not contribute to the margin of safety associated with the accident analysis. Certain postulated DBAs involving the reactor are no longer possible because the

reactor will be permanently shut down and defueled and DAEC will no longer be authorized to operate the reactor.

Therefore, the proposed changes, as supplemented, have no impact to the margin of safety.

Based on the above, NEDA concludes that the proposed change, as supplemented, presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

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 issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATIONS

NEDA has evaluated the proposed amendment, as supplemented, for environmental considerations. The review has determined that the proposed amendment, as supplemented, would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment, as supplemented, does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment, as supplemented, meets the eligibility criterion for categorical exclusion set for in 10 CFR 51.22(c)(9).

In addition, the proposed changes, as supplemented, involve changes to recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the proposed amendment, as supplemented, meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(10).

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment, as supplemented.

6.0 REFERENCES

- 6.1 Letter from Dean Curtland, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission – “License Amendment Request (TSCR-183): Application to Revise Operating License and Technical Specifications for Permanently Defueled Condition,” dated June 20, 2019, (ML19176A356).
- 6.2 Letter from Dean Curtland, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission - "License Amendment Request (TSCR-181): Application to Align Technical Specification Staffing and Administrative Requirements for Permanently Defueled Condition," dated April 19, 2019, (ML19109A031).
- 6.3 Letter from D. Hood (U.S. Nuclear Regulatory Commission) to G. Van Middlesworth – “Issuance of Amendment Regarding Secondary Containment Operability During Movement of Irradiated Fuel and Core Alterations,” dated April 16, 2001, (ML011070147).

LIST OF ATTACHMENTS

- Attachment 1 - Proposed Technical Specification Changes (Mark-Up)
Attachment 2 - Revised Technical Specification Pages (Clean, with Proposed Changes)
Attachment 3 – Proposed Technical Specification Bases Changes (Mark-Up)

Duane Arnold Energy Center
Docket No. 50-331
License Amendment Request
NG-19-0102 Enclosure, Attachment 1 Page 1 of 361

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

NEXTERA ENERGY DUANE ARNOLD, LLC
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE
DOCKET 50-331
DUANE ARNOLD ENERGY CENTER
RENEWED FACILITY OPERATING LICENSE

Renewed License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) having found that ...
- A. The application for license filed by FPL Energy Duane Arnold, LLC, ^{*} Central Iowa Power Cooperative and Corn Belt Power Cooperative (the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
 - B. ~~Construction of the Duane Arnold Energy Center (facility) has been substantially completed in conformity with Construction Permit No. DPPR 70; the application, as amended; the provisions of the Act; and the rules and regulations of the Commission;~~
 - C. The facility will ~~operate in conformity with the application, as amended; the provisions of the Act; and the rules and regulations of the Commission;~~ be maintained
 - D. There is reasonable assurance: (i) that the activities authorized by this renewed ~~operating~~ license can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. NextEra Energy Duane Arnold, LLC is technically qualified and NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative are financially qualified to engage in the activities authorized by this renewed ~~operating~~ license in accordance with the rules and regulations of the Commission;
 - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this renewed ~~operating~~ license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the issuance of renewed Facility ~~Operating~~ License No. DPR-49 is in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D have been satisfied;

Deleted

* On April 16, 2009, the name "FPL Energy Duane Arnold, LLC" was changed to "NextEra Energy Duane Arnold, LLC."

Amendment

Renewed License No. DPR-49

Deleted

1. ~~The receipt, possession, and use of source, by product and special nuclear material as authorized by this renewed operating license will be in accordance with the Commission's regulations in 10 CFR Part 30 and 70, including 10 CFR Section 30.33, 70.24 and 70.34.~~

permanently defueled

2. Renewed Facility Operating License No. DPR-49 is hereby issued to NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative (CIPCO) and Corn Belt Power Cooperative (Corn Belt) to read as follows:

A This renewed ~~operating~~ license applies to the Duane Arnold Energy Center, a boiling water reactor and associated equipment (the facility), owned by NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative and operated by NextEra Energy Duane Arnold, LLC. The facility is located on NextEra Energy Duane Arnold, LLC's, Central Iowa Power Cooperative's and Corn Belt Power Cooperative's site near Palo in Linn County, Iowa. This site consists of approximately 500 acres adjacent to the Cedar River and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 1 through 14) and the Environmental Report as supplemented and amended (Supplements 1 through 5).

B Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:

as required for nuclear fuel storage

(1) NextEra Energy Duane Arnold, LLC, pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, ~~use and operate~~ the facility, and CIPCO and Corn Belt to possess the facility at the designated location in Linn County, Iowa, in accordance with the procedures and limitations set forth in this license;

use

(2) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Part 70, to ~~receive, possess and use~~ at any time special nuclear material as reactor fuel, in accordance with the limitations for storage ~~and amounts required for reactor operation~~, as described in the Updated Final Safety Analysis Report, as supplemented and amended as of June 1992 and as supplemented by letters dated March 26, 1993, and November 17, 2000.

that was used

(3) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, ~~source and special nuclear material as sealed neutron sources for reactor startup~~, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, ~~and as fission detectors in amounts as required~~;

or

(4) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated radioactive apparatus components;

(5) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear materials ~~as may be produced by the operation of the facility.~~

that were

and to possess any byproduct, source and special nuclear material as sealed neutron sources previously used for reactor startup or reactor instrumentation; and fission detectors;

Renewed License No. DPR-49

Amendment

C. This renewed ~~operating~~ license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level ← Deleted

~~NextEra Energy Duane Arnold, LLC is authorized to operate the Duane Arnold Energy Center at steady state reactor core power levels not in excess of 1912 megawatts (thermal).~~

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 307, are hereby incorporated in the license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Technical Specifications.

Permanently Defueled

~~(a) For Surveillance Requirements (SRs) whose acceptance criteria are modified, either directly or indirectly, by the increase in authorized maximum power level in 2.C.(1) above, in accordance with Amendment No. 243 to Facility Operating License DPR 49, those SRs are not required to be performed until their next scheduled performance, which is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment No. 243.~~

maintain

~~(b) Deleted.~~

(3) Fire Protection Program

NextEra Energy Duane Arnold, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated August 5, 2011 (and supplements dated October 14, 2011, April 23, 2012, May 23, 2012, July 9, 2012, October 15, 2012, January 11, 2013, February 12, 2013, March 6, 2013, May 1, 2013, May 29, 2013, two supplements dated July 2, 2013, and supplements dated August 5, 2013 and August 28, 2013) and as approved in the safety evaluation report dated September 10, 2013. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

- Fire Alarm and Detection Systems (Section 3.8);
- Automatic and Manual Water-Based Fire Suppression Systems (Section 3.9);
- Gaseous Fire Suppression Systems (Section 3.10); and,
- Passive Fire Protection Features (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation report dated September 10, 2013 to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

Transition License Conditions

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) and (3) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
- (2) The licensee shall implement the modifications to its facility, as described in Enclosure 2, Attachment S, Table S-1, "Plant modifications Committed," of DAEC letter NG-13-0287, dated July 2, 2013, to complete the transition to full compliance with 10 CFR 50.48(c) by December 31, 2014. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
- (3) The licensee shall implement the items listed in Enclosure 2, Attachment S, Table S-2, "Implementation Items," of DAEC letter NG-13-0287, dated July 2, 2013, by March 9, 2014.

Deleted

- (4) ~~The licensee is authorized to operate the Duane Arnold Energy Center following installation of modified safe ends on the eight primary recirculation system inlet lines which are described in the licensee letter dated July 31, 1978, and supplemented by letter dated December 8, 1978.~~

(5) Physical Protection

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification,

Deleted

(11) ~~The information in the UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be incorporated into the UFSAR no later than the next scheduled update required by 10 CFR 50.71(e) following the issuance of this renewed operating license. Until this update is complete, the licensee may not make changes to the information in the supplement. Following incorporation into the UFSAR, the need for prior Commission approval of any changes will be governed by 10 CFR 50.60.~~

(12) ~~The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), and as supplemented by Appendix A of NUREG 1955, "Safety Evaluation Report Related to the License Renewal of Duane Arnold Energy Center," dated November 2010, as supplemented by letter from the licensee to the NRC dated November 23, 2010, describes certain programs to be implemented and activities to be completed before the period of extended operation~~

Deleted

a. ~~NextEra Energy Duane Arnold, LLC shall implement these new programs and enhancements to existing programs no later than February 21, 2014.~~

b. ~~NextEra Energy Duane Arnold, LLC shall complete these activities no later than February 21, 2014.~~

~~The licensee shall notify the NRC in writing within 30 days after having accomplished item (a) above and include the status of those activities that have been or remain to be completed in item (b) above.~~

(13) ~~The licensee shall implement the most recent staff approved version of the Boiling Water Reactor Vessels and Internals Project (BWRVIP) Integrated Surveillance Program (ISP) as the method to demonstrate compliance with the requirements of 10 CFR Part 50, Appendix H. Any changes to the BWRVIP ISP capsule withdrawal schedule must be submitted for staff review and approval. Any changes to the BWRVIP ISP capsule withdrawal schedule which affects the time of withdrawal of any surveillance capsules must be incorporated into the licensing basis. If any surveillance capsules are removed without the intent to test them, those capsules must be stored in a manner which maintains them in a condition which would support re-insertion into the reactor pressure vessel if necessary.~~

Deleted

D. This license is effective as of the date of issuance and ~~shall expire at midnight February 21, 2034.~~ is effective until the Commission notifies the licensee in writing that the license is terminated.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by Eric J. Leeds

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Appendix A Technical Specifications
2. Appendix B Additional Conditions

Date of Issuance: December 16, 2010

Renewed License No. DPR-49
Amendment 287

APPENDIX B

ADDITIONAL CONDITIONS
OPERATING LICENSE NO. DPR-49

NextEra Energy Duane Arnold, LLC (the term licensee in Appendix B refers to NextEra Energy Duane Arnold, LLC or prior license holders) shall comply with the following conditions on the schedule noted below:

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
223 ↑ 275	NextEra Energy Duane Arnold, LLC is authorized to relocate certain requirements included in Appendix A to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's application dated October 30, 1996, as supplemented and consolidated in its March 31, 1998, submittal. These relocations were evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 180 days of the date of this amendment.
260 (1) → 275	At the time of the closing of the transfer of the license from Interstate Power and Light Company (IPL) to FPLE Duane Arnold*, IPL shall transfer to FPLE Duane Arnold* IPL's decommissioning funds accumulated as of such time, with a aggregate minimum value of at least \$186 million, and FPLE Duane Arnold* shall deposit such funds in an external decommissioning trust fund established by FPLE Duane Arnold* for DAEC. NextEra Energy Duane Arnold shall take all necessary steps to ensure that this external trust fund is maintained in accordance with the requirements of the order approving the license transfer, NRC regulations, and consistent with the safety evaluation supporting the order. The trust agreement shall be in a form acceptable to the NRC. the December 23, 2005 established at the time of the closing of the transfer of the license from Interstate Power and Light Company (IPL) to FPLE Duane Arnold	This amendment is effective immediately and shall be implemented within 30 days of the date of this amendment.

* On April 16, 2009, the name "FPL Energy Duane Arnold, LLC" was changed to "NextEra Energy Duane Arnold, LLC."

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
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260 (2)	DELETED	
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↖ 279

260 (3)	NextEra Energy Duane Arnold shall take no action to cause FPL Group Capital, or its successors and assigns, to void, cancel, or modify its \$50 million contingency commitment to NextEra Energy Duane Arnold, as represented in the license transfer application, or cause it to fail or perform or impair its performance under the commitment, or remove or interfere with NextEra Energy Duane Arnold's ability to draw upon the commitment, without the prior written consent from the NRC. An executed copy of the Support Agreement shall be submitted to the NRC no later than 30 days after completion of the license transfer. Also, NextEra Energy Duane Arnold shall inform the NRC in writing any time that it draws upon the \$50 million commitment.	
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DELETED ↗

†
|

1.0 USE AND APPLICATION

1.1 Definitions

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the heat generation rate per unit length of fuel rod for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle at the height.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with Resistance Temperature Detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.

(continued)

1.1 Definitions (continued)

~~CHANNEL CHECK~~

~~A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.~~

~~CHANNEL FUNCTIONAL TEST~~

~~A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps.~~

~~CORE ALTERATION~~

~~CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:~~

- ~~a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and~~
- ~~b. Control rod movement, provided there are no fuel assemblies in the associated core cell.~~

~~Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.~~

(continued)

1.1 Definitions (continued)

~~CORE OPERATING LIMITS REPORT (COLR)~~ The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.

~~DOSE EQUIVALENT I-131~~ DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/ml), that alone would produce the same dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be those listed in Federal Guidance Report (FGR) 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1980 and FGR 12, "External Exposure to Radionuclides in Air, Water, and Soil," 1993.

~~DRAIN TIME~~ The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the Reactor Vessel Water Level Safety Limit of T.S. 2.1.1.3 assuming:

- a) The water inventory above the T.S. 2.1.1.3 Safety Limit is divided by the limiting drain rate;

(cont'd)

(continued)

1.1 Definitions (continued)

~~DRAIN TIME (cont'd)~~

- ~~b) The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure (e.g., seismic event, loss of normal power, single human error), for all penetration flow paths below the T.S. 2.1.1.3 Safety Limit except:~~
- ~~1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are locked, sealed, or otherwise secured in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;~~
 - ~~2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the T.S. 2.1.1.3 Safety Limit when actuated by RPV water level isolation instrumentation; or~~
 - ~~3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the T.S. 2.1.1.3 Safety Limit by a dedicated operator trained in the task, who is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power.~~
- ~~e) The penetration flow paths required to be evaluated per paragraph b) are assumed to open instantaneously and are not subsequently isolated, and no water is assumed to be subsequently added to the RPV water inventory;~~
- ~~d) No additional draining events occur; and~~
- ~~e) Realistic cross-sectional areas and drain rates are used.~~

~~A bounding DRAIN TIME may be used in lieu of a calculated value.~~

(continued)

1.1 Definitions (continued)

~~END OF CYCLE
RECIRCULATION PUMP
TRIP (EOC RPT) SYSTEM
RESPONSE TIME~~

~~The EOC RPT SYSTEM RESPONSE TIME shall be that time interval from initial signal generation by the associated turbine stop valve limit switch or from when the turbine control valve hydraulic oil control oil pressure drops below the pressure switch setpoint to actuation of the breaker secondary (auxiliary) contact. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.~~

~~INSERVICE TESTING~~

~~The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).~~

(continued)

1.1 Definitions (continued)

LEAKAGE

~~LEAKAGE shall be:~~

~~a. Identified LEAKAGE~~

- ~~1. LEAKAGE into the drywell, such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or~~
- ~~2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known not to interfere with the operation of leakage detection systems;~~

~~b. Unidentified LEAKAGE~~

~~All LEAKAGE into the drywell that is not identified LEAKAGE;~~

~~c. Total LEAKAGE~~

~~Sum of the identified and unidentified LEAKAGE.~~

~~LOGIC SYSTEM
FUNCTIONAL TEST~~

~~A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.~~

~~MINIMUM CRITICAL
POWER RATIO (MCPR)~~

~~The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience transition boiling, divided by the actual assembly operating power. Transition boiling means the boiling regime between nucleate and film boiling. Transition boiling is the regime in which both nucleate and~~

(continued)

1.1 Definitions (continued)

~~MINIMUM CRITICAL
POWER RATIO (MCPR)~~

~~film boiling occur intermittently with neither type being
completely stable.~~

~~MODE~~

~~A MODE shall correspond to any one inclusive
combination of mode switch position, average reactor
coolant temperature, and reactor vessel head closure
bolt tensioning specified in Table 1.1-1 with fuel in the
reactor vessel.~~

~~OPERABLE — OPERABILITY~~

~~A system, subsystem, division, component, or device
shall be OPERABLE or have OPERABILITY when it is
capable of performing its specified safety function(s)
and when all necessary attendant instrumentation,
controls, normal or emergency electrical power,
cooling and seal water, lubrication, and other auxiliary
equipment that are required for the system,
subsystem, division, component, or device to perform
its specified safety function(s) are also capable of
performing their related support function(s).~~

~~PRESSURE AND
TEMPERATURE LIMITS
REPORT (PTLR)~~

~~The PTLR is the unit specific document that provides
the reactor vessel pressure and temperature limits,
including heatup and cooldown rates, for the current
reactor vessel fluence period. These pressure and
temperature limits shall be determined for each
fluence period in accordance with Specification 5.6.7.~~

~~RATED THERMAL
POWER (RTP)~~

~~RTP shall be a total reactor core heat transfer rate to
the reactor coolant of 1012 MWt.~~

~~REACTOR
PROTECTION SYSTEM
(RPS) RESPONSE
TIME~~

~~The RPS RESPONSE TIME shall be that time interval
from when the monitored parameter exceeds its RPS
trip setpoint at the channel sensor until de-
energization of the scram pilot valve solenoids. The
response time may be measured by means of any
series of sequential, overlapping, or total steps so that
the entire response time is measured.~~

(continued)

1.1 Definitions (continued)

~~SHUTDOWN MARGIN
(SDM)~~

~~SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that:~~

- ~~a. The reactor is xenon free;~~
- ~~b. The moderator temperature is $\geq 68^{\circ}\text{F}$ (20°C), corresponding to the most reactive state; and~~
- ~~c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn with the core in its most reactive state during the operating cycle. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.~~

1.1 Definitions (continued)

~~THERMAL POWER~~ ~~THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.~~

~~TURBINE BYPASS SYSTEM RESPONSE TIME~~ ~~The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components:~~

- ~~a. The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and~~
- ~~b. The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve.~~

~~The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.~~

(continued)

Table 1.1.1 (page 1 of 1)
MODES

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel ^(a) or Startup/Hot Standby	NA
3	Hot Shutdown ^(a)	Shutdown	> 212
4	Cold Shutdown ^(a)	Shutdown	≤ 212
5	Refueling ^(b)	Shutdown or Refuel	NA

(a) All reactor vessel head closure bolts fully tensioned.

(b) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors ← DELETED

PURPOSE ~~The purpose of this section is to explain the meaning of logical connectors.~~

~~Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.~~

BACKGROUND ~~Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors.~~

~~When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.~~

EXAMPLES ~~The following examples illustrate the use of logical connectors.~~

(continued)

1.2 Logical Connectors

EXAMPLES
(continued)

Example 1.2.1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify ... <u>AND</u> A.2 Restore ...	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

(continued)

4.2 Logical Connectors

EXAMPLES
(continued)

Example 1.2.2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip ... <u>OR</u> A.2.1 Verify ... <u>AND</u> A.2.2.1 Reduce ... <u>OR</u> A.2.2.2 Perform ... <u>OR</u> A.3 Align ...	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND safely maintaining facility
Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Times(s).

DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.

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~~If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.~~

~~Once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.~~

(continued)

1.3 Completion Times

DESCRIPTION
(continued)

~~However, when a subsequent division, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:~~

- ~~a. Must exist concurrent with the first inoperability;
and~~
- ~~b. Must remain inoperable or not within limits after the first inoperability is resolved.~~

~~The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:~~

- ~~a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or~~
- ~~b. The stated Completion Time as measured from discovery of the subsequent inoperability.~~

~~The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each division, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.~~

~~The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery..." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Condition A and B in Example 1.3-3 may not be extended.~~

(continued)

1.3 Completion Times (continued)

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3.1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to be in MODE 3 within 12 hours AND in MODE 4 within 36 hours. A total of 12 hours is allowed for reaching MODE 3 and a total of 36 hours (not 48 hours) is allowed for reaching MODE 4 from the time that Condition B was entered. If MODE 3 is reached within 6 hours, the time allowed for reaching MODE 4 is the next 30 hours because the total time allowed for reaching MODE 4 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 4 is the next 36 hours.

(continued)

1.3 Completion Times

EXAMPLES
(continued)

EXAMPLE 1.3.2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

~~When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clock for Required Actions B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Conditions A and B are exited, and therefore, the Required Actions of Condition B may be terminated.~~

~~When a second pump is declared inoperable while the first pump is still inoperable, Condition A is not re entered for the second pump. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable pump. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but continues to be tracked from the time Condition A was initially entered.~~

~~While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has not expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition A.~~

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

~~While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition B. The Completion Time for Condition B is tracked from the time the Condition A Completion Time expired.~~

~~On restoring one of the pumps to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first pump was declared inoperable. This Completion Time may be extended if the pump restored to OPERABLE status was the first inoperable pump. A 24 hour extension to the stated 7 days is allowed, provided this does not result in the second pump being inoperable for > 7 days.~~

(continued)

1.3 Completion Times

EXAMPLES
(continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X subsystem inoperable.	A.1 Restore Function X subsystem to OPERABLE status.	7 days <u>AND</u> 10 days from discovery of failure to meet the LCO
B. One Function Y subsystem inoperable.	B.1 Restore Function Y subsystem to OPERABLE status.	72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO
C. One Function X subsystem inoperable. <u>AND</u> One Function Y subsystem inoperable	C.1 Restore Function X subsystem to OPERABLE status. <u>OR</u> C.2 Restore Function Y subsystem to OPERABLE status.	72 hours 72 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3.3 (continued)

~~When one Function X subsystem and one Function Y subsystem are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each subsystem, starting from the time each subsystem was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second subsystem was declared inoperable (i.e., the time the situation described in Condition C was discovered).~~

~~If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected subsystem was declared inoperable (i.e., initial entry into Condition A).~~

~~The Completion Times of Conditions A and B are modified by a logical connector, with a separate 10 day Completion Time measured from the time it was discovered the LCO was not met. In this example, without the separate Completion Time, it would be possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. The separate Completion Time modified by the phrase "from discovery of failure to meet the LCO" is designed to prevent indefinite continued operation while not meeting the LCO. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock". In this instance, the Completion Time "time zero" is specified as commencing at the time the LCO was initially not met, instead of at the time the associated Condition was entered.~~

(continued)

1.3 Completion Times

EXAMPLES
(continued)

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (plus the extension) expires while one or more valves are still inoperable, Condition B is entered.

(continued)

1.3 Completion Times

~~EXAMPLES~~
~~(continued)~~

~~EXAMPLE 1.3-5~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each inoperable valve.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

~~The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.~~

~~The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.~~

~~(continued)~~

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3.5 (continued)

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3.6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x.	Once per 8 hours
	<u>OR</u> A.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3.6 (continued)

~~Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. The initial 8 hour interval of Required Action A.1 begins when Condition A is entered and the initial performance of Required Action A.1 must be complete within the first 8 hour interval. If Required Action A.1 is followed and the Required Action is not met within the Completion Time (plus the extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.~~

~~If after entry into Condition B, Required Action A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.~~

(continued)

1.3 Completion Times

EXAMPLES
(continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour <u>AND</u> Once per 8 hours thereafter
	A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	B.2 Be in MODE 4.	36 hours

Required Action A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon performance of Required Action A.1.

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1

(continued)

1.3 Completion Times

~~EXAMPLES~~

~~EXAMPLE 1.3.7 (continued)~~

~~is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.~~

IMMEDIATE
COMPLETION
TIME

When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE	The purpose of this section is to define the proper use and application of Frequency requirements.
DESCRIPTION	<p>Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.</p> <p>The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.</p> <p>Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both.</p> <p>Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.</p> <p>The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance</p>

(continued)

1.4 Frequency

DESCRIPTION
(continued)

~~criteria. Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LGO if any of the following three conditions are satisfied:~~

- ~~a. The Surveillance is not required to be met in the MODE or other specified condition to be entered; or~~
- ~~b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or~~
- ~~c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.~~

~~Examples 1.4.3, 1.4.4, 1.4.5, and 1.4.6 discuss these special situations.~~

(continued)

1.4 Frequency (continued)

illustrates

manner in which

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Examples 1.4.3 and 1.4.4), then SR 3.0.3 becomes applicable.

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~~If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.~~

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4 2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after $\geq 25\%$ RTP <u>AND</u> 24 hours thereafter

~~Example 1.4 2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4 1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level $< 25\%$ RTP to $\geq 25\%$ RTP, the Surveillance must be performed within 12 hours.~~

~~The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the extension allowed by SR 3.0.2.~~

~~"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to $< 25\%$ RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.~~

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4.3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p><u>NOTE</u></p> <p>Not required to be performed until 12 hours after $\geq 25\%$ RTP.</p>	
<p>Perform channel adjustment.</p>	<p>7 days</p>

~~The interval continues whether or not the unit operation is $< 25\%$ RTP between performances.~~

~~As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is $< 25\%$ RTP, this Note allows 12 hours after power reaches $\geq 25\%$ RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day interval (plus the extension allowed by SR 3.0.2), but operation was $< 25\%$ RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours (plus the extension allowed by SR 3.0.2) with power $\geq 25\%$ RTP.~~

~~Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval (plus the extension allowed by SR 3.0.2) there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.~~

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4.4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p style="text-align: center;"><u>NOTE</u></p> <p>Only required to be met in MODE 1.</p> <hr/> <p>Verify leakage rates are within limits.</p>	<p>24 hours</p>

~~Example 1.4.4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4.1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.~~

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4.5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p><u>NOTE</u> Only required to be performed in MODE 1.</p>	
Perform complete cycle of the valve	7 days

The interval continues, whether or not the unit operation is in MODE 1, 2 or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4.6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met in MODE 3.</p>	
<p>Verify parameter is within limits.</p>	<p>24 hours</p>

~~Example 1.4.6 specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4.1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.~~

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SLs
2.0

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 ~~Fuel Cladding Integrity—With the reactor steam dome pressure < 686 psig or core flow < 10% rated core flow:~~

~~THERMAL POWER shall be ≤ 21.7% RTP.~~

2.1.1.2 ~~MCPR—With the reactor steam dome pressure ≥ 686 psig and core flow ≥ 10% rated core flow:~~

~~MCPR shall be ≥ 1.08 for two recirculation loop operation or ≥ 1.11 for single recirculation loop operation.~~

2.1.1.3 ~~Reactor Vessel Water Level—Reactor vessel water level shall be greater than 15 inches above the top of active irradiated fuel.~~

2.1.2 Reactor Coolant System Pressure SL

~~Reactor steam dome pressure shall be ≤ 1335 psig.~~

2.2 SL Violations

~~With any SL violation, the following actions shall be completed within 2 hours:~~

~~2.2.1 Restore compliance with all SLs; and~~

~~2.2.2 Fully insert all insertable rods.~~

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the ~~MODES or other~~ specified conditions in the Applicability, except as provided in LCO 3.0.2, ~~LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.~~

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, ~~except as provided in LCO 3.0.5 and LCO 3.0.6.~~

~~If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.~~

LCO 3.0.3

Deleted.

~~When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:~~

- ~~a. MODE 2 within 9 hours;~~
- ~~b. MODE 3 within 13 hours; and~~
- ~~c. MODE 4 within 37 hours.~~

~~Exceptions to this Specification are stated in the individual Specifications.~~

~~Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.~~

~~LCO 3.0.3 is only applicable in MODES 1, 2, and 3.~~

LCO 3.0.4

Deleted.

~~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;~~

(continued)

3.0 LCO APPLICABILITY

~~LCO 3.0.4
(continued)~~

- ~~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~~
- ~~e. 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.~~

LCO 3.0.5

Deleted.

~~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.~~

LCO 3.0.6

Deleted.

~~When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.11, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.~~

~~When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.~~

(continued)

3.0 LCO APPLICABILITY (continued)

LCO 3.0.7

Deleted.

~~Special Operations LCOs in Section 3.10 allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.~~

LCO 3.0.8

Deleted.

~~When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:~~

- ~~a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or~~
- ~~b. the snubbers not able to perform their associated support function (s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.~~

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~~At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.~~

LCO 3.0.9

~~When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related~~

(continued)

3.0 LCO APPLICABILITY (continued)

~~LCO 3.0.9
(continued)~~

~~support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.~~

~~For the purposes of this specification, the High Pressure Coolant Injection system, the Reactor Core Isolation Cooling system, and the Automatic Depressurization System are considered independent subsystems of a single system.~~

~~If the required OPERABLE train or subsystem becomes inoperable while this specification is in use, it must be restored to OPERABLE status within 24 hours or the provisions of this specification cannot be applied to the trains or subsystems supported by the barriers that cannot perform their related support function(s).~~

~~At the end of the specified period, the required barriers must be able to perform their related support function(s) or the supported system LCO (s) shall be declared not met.~~

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1 SRs shall be met during the ~~MODES or other~~ specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. 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 Frequency shall be failure to meet the LCO ~~except as provided in SR 3.0.3~~. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

~~If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.~~

~~Exceptions to this Specification are stated in the individual Specifications.~~

SR 3.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, 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 Frequency, 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 Condition(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 Condition(s) must be entered.

(continued)

3.0 SR APPLICABILITY (continued)

SR 3.0.4

Entry into a ~~MODE or other~~ specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. ~~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.~~

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~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.1 SHUTDOWN MARGIN (SDM)~~

~~LCO 3.1.1~~

SDM shall be:

- a. ~~$\geq 0.38\% \Delta k/k$, with the highest worth control rod analytically determined; or~~
- b. ~~$\geq 0.28\% \Delta k/k$, with the highest worth control rod determined by test.~~

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

ACTIONS

<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
A. SDM not within limits in MODE 1 or 2.	A.1 Restore SDM to within limits.	6 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
C. SDM not within limits in MODE 3.	C.1 Initiate action to fully insert all insertable control rods.	Immediately
D. SDM not within limits in MODE 4.	D.1 Initiate action to fully insert all insertable control rods. <u>AND</u>	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D: (continued)</p>	<p>D.2 Initiate action to restore secondary containment to OPERABLE status.</p> <p><u>AND</u></p> <p>D.3 Initiate action to restore one Standby Gas Treatment (SBGT) subsystem to OPERABLE status.</p> <p><u>AND</u></p> <p>D.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.</p>	<p>1 hour</p> <p>1 hour</p> <p>1 hour</p>
<p>E: SDM not within limits in MODE 5.</p>	<p>E.1 Suspend CORE ALTERATIONS except for control rod insertion and fuel assembly removal.</p> <p><u>AND</u></p> <p>E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.</p> <p><u>AND</u></p>	<p>Immediately</p> <p>Immediately</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. (continued)	E.3 Initiate action to restore secondary containment to OPERABLE status.	1 hour
	<u>AND</u>	
	E.4 Initiate action to restore one SBGT subsystem to OPERABLE status.	1 hour
<u>AND</u>		
E.5 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	1 hour	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	<p>Verify SDM is:</p> <p>a. $\geq 0.38\% \Delta k/k$ with the highest worth control rod analytically determined; or</p> <p>b. $\geq 0.28\% \Delta k/k$ with the highest worth control rod determined by test.</p>	<p>Prior to each in-vessel fuel movement during fuel loading sequence</p> <p><u>AND</u></p> <p>Once within 4 hours after criticality following fuel movement within the reactor pressure vessel or control rod replacement</p>

~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.2 Reactivity Anomalies~~

~~LCO 3.1.2 The reactivity difference between the monitored core k_{eff} and the predicted core k_{eff} shall be within $\pm 1\% \Delta k/k$.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core reactivity difference not within limit.	A.1 Restore core reactivity difference to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.1.2.1 Verify core reactivity difference between the monitored core k_{eff} and the predicted core k_{eff} is within $\pm 1\% \Delta k/k$.</p>	<p>Once within 24 hours after reaching equilibrium conditions following startup after fuel movement within the reactor pressure vessel or control rod replacement</p> <p><u>AND</u></p> <p>4000 MWD/T thereafter during operations in MODE 1</p>

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Control Rod OPERABILITY

LCO 3.1.3 Each control rod shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

NOTE

Separate Condition entry is allowed for each control rod.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One withdrawn control rod stuck.	<hr/> NOTE <hr/> Rod Worth Minimizer (RWM) may be bypassed as allowed by LOC 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow continued operation.	
	A.1 Verify stuck control rod separation criteria are met.	Immediately
	AND A.2 Disarm the associated Control Rod Drive (CRD). AND	2 hours
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.3 Perform SR 3.1.3.2 for each withdrawn OPERABLE control rod.</p> <p><u>AND</u></p> <p>A.4 Perform SR 3.1.1.1</p>	<p>24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the Low Power Setpoint (LPSP) of the RWM.</p> <p>72 hours</p>
<p>B. Two or more withdrawn control rods stuck.</p>	<p>B.1 Be in MODE 3.</p>	<p>12 hours</p>
<p>C. One or more control rods inoperable for reasons other than Condition A or B.</p>	<p>C.1 <u>NOTE</u> RWM may be bypassed as allowed by LCO 3.3.2.1, if required, to allow insertion of inoperable control rod and continued operation.</p> <p>Fully insert inoperable control rod.</p> <p><u>AND</u></p>	<p>3 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. (continued)</p>	<p>C.2 Disarm the associated CRD.</p>	<p>4 hours</p>
<p>D. NOTE Not applicable when THERMAL POWER > 40% RTP.</p> <hr/> <p>Two or more inoperable control rods not in compliance with Banked Position Withdrawal Sequence (BPWS) and not separated by two or more OPERABLE control rods.</p>	<p>D.1 Restore compliance with BPWS.</p> <p><u>OR</u></p> <p>D.2 Restore control rod to OPERABLE status.</p>	<p>4 hours</p> <p>4 hours</p>
<p>E. Required Action and associated Completion Time of Condition A, C, or D, not met.</p> <p><u>OR</u></p> <p>Nine or more control rods inoperable.</p>	<p>E.1 Be in MODE 3.</p>	<p>12 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.2	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than 20% RTP.</p> <hr/> <p>Insert each withdrawn control rod at least one notch.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.3	Verify each control rod scram time from fully withdrawn to notch position 04 is ≤ 7 seconds.	In accordance with SR 3.1.4.1 and SR 3.1.4.2
SR 3.1.3.4	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	<p>Each time the control rod is withdrawn to "full out" position</p> <p><u>AND</u></p> <p>Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect coupling</p>

(continued)

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~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.4 Control Rod Scram Times~~

- ~~LCO 3.1.4~~
- ~~a. No more than 6 OPERABLE control rods shall be "slow," in accordance with Table 3.1.4-1; and~~
 - ~~b. No more than 2 OPERABLE control rods that are "slow" shall occupy adjacent locations.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Be in MODE 3.	12 hours

~~SURVEILLANCE REQUIREMENTS~~

~~NOTE~~

~~During single control rod scram time Surveillances, the Control Rod Drive (CRD) pumps shall be isolated from the associated scram accumulator.~~

SURVEILLANCE	FREQUENCY
SR 3.1.4.1 Verify each control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure \geq 800 psig.	Prior to exceeding 40% RTP after each refueling AND (continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.1.4.1 (continued)</p>	<p>Prior to exceeding 40% RTP after each reactor shutdown ≥ 120 days</p>
<p>SR 3.1.4.2 Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.</p>	<p>Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time</p> <p><u>AND</u></p> <p>Prior to exceeding 40% RTP after fuel movement within the reactor pressure vessel</p>

Table 3.1.4-1 (page 1 of 1)
Control Rod Scram Times

NOTES

1. ~~OPERABLE control rods with scram times not within the limits of this Table are considered "slow."~~
2. ~~Enter applicable Conditions and Required Actions of LCO 3.1.3, "Control Rod OPERABILITY," for control rods with scram times > 7 seconds to notch position 04. These control rods are inoperable, in accordance with SR 3.1.3.3, and are not considered "slow."~~

NOTCH POSITION	SCRAM TIMES ^(a) (seconds) when REACTOR STEAM DOME PRESSURE ≥ 800 psig
46	0.44
38	0.93
26	1.83
06	3.35

(a) ~~Maximum scram time from fully withdrawn position, based on de-energization of scram pilot valve solenoids at time zero.~~

~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.5 Control Rod Scram Accumulators~~

~~LCO 3.1.5 Each control rod scram accumulator shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each control rod scram accumulator.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One control rod scram accumulator inoperable with reactor steam dome pressure \geq 900 psig.</p>	<p>A.1 <u>NOTE</u> Only applicable if the associated control rod scram time was within the limits of Table 3.1.4.1 during the last scram time Surveillance.</p>	<p>8 hours</p>
	<p><u>OR</u></p> <p>A.2 Declare the associated control rod inoperable.</p>	

~~(continued)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Two or more control rod scram accumulators inoperable with reactor steam dome pressure \geq 900 psig.</p>	<p>B.1 Restore charging water header pressure to \geq 940 psig.</p> <p><u>AND</u></p> <p>B.2.1 <u>NOTE</u> Only applicable if the associated control rod scram time was within the limits of Table 3.1.4-1 during the last scram time Surveillance.</p> <hr/> <p>Declare the associated control rod scram time "slow."</p> <p><u>OR</u></p> <p>B.2.2 Declare the associated control rod inoperable.</p>	<p>1 hour from discovery of condition B concurrent with charging water header pressure $<$ 940 psig</p> <p>1 hour</p> <p>1 hour</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. One or more control rod scram accumulators inoperable with reactor steam dome pressure < 900 psig.</p>	<p>C.1 Verify all control rods associated with inoperable accumulators are fully inserted.</p>	<p>Immediately upon discovery of charging water header pressure < 940 psig</p> <p>1 hour</p>
	<p><u>AND</u></p> <p>C.2 Declare the associated control rod inoperable.</p>	
<p>D. Required Action and associated Completion Time of Required Action B.1 or C.1 not met.</p>	<p>D.1 NOTE</p> <p>Not applicable if all inoperable control rod scram accumulators are associated with fully inserted control rods.</p> <hr/> <p>Place the reactor mode switch in the Shutdown position.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.1.5.1 Verify each control rod scram accumulator pressure is \geq 940 psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.6 Red Pattern Control~~

~~LCO 3.1.6 OPERABLE control rods shall comply with the requirements of the Banked Position Withdrawal Sequence (BPWS).~~

~~APPLICABILITY: MODES 1 and 2 with THERMAL POWER ≤ 10% RTP.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more OPERABLE control rods not in compliance with BPWS.</p>	<p>A.1 <u> NOTE </u> Red Worth Minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation."</p> <hr/> <p>Move associated control rod(s) to correct position.</p>	<p>8 hours</p>
	<p><u>OR</u></p> <p>A.2 Declare associated control rod(s) inoperable.</p>	<p>8 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Nine or more OPERABLE control rods not in compliance with BPWS.</p>	<p>B.1 <u>NOTE</u> Red Worth Minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1.</p> <hr/> <p>Suspend withdrawal of control rods.</p> <p><u>AND</u></p> <p>B.2 Place the reactor mode switch in the Shutdown position.</p>	<p>Immediately</p> <p>1 hour</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.1.6.1 Verify all OPERABLE control rods comply with BPWS.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.1 REACTIVITY CONTROL SYSTEMS~~

~~3.1.7 Standby Liquid Control (SLC) System~~

~~LCO 3.1.7 Two SLC subsystems shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SLC subsystem inoperable.	A.1 Restore SLC subsystem to OPERABLE status.	7 days
B. Two SLC subsystems inoperable.	B.1 Restore one SLC subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify available volume of sodium pentaborate solution is within the limits of Figure 3.1.7 1.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.2	Verify temperature of sodium pentaborate solution is within the limits of Figure 3.1.7 2.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.3	Verify temperature of pump suction piping is within the limits of Figure 3.1.7 2.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.4	Verify continuity of explosive charge.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.5	Verify the concentration of boron in solution is within the limits of Figure 3.1.7 1.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after water or boron is added to solution <u>AND</u> Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7 2

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.6	Verify each pump develops a flow rate ≥ 26.2 gpm at a discharge pressure ≥ 4150 psig.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.1.7.7	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.8	Verify all heat traced piping between storage tank and pump suction is unblocked.	In accordance with the Surveillance Frequency Control Program AND Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2

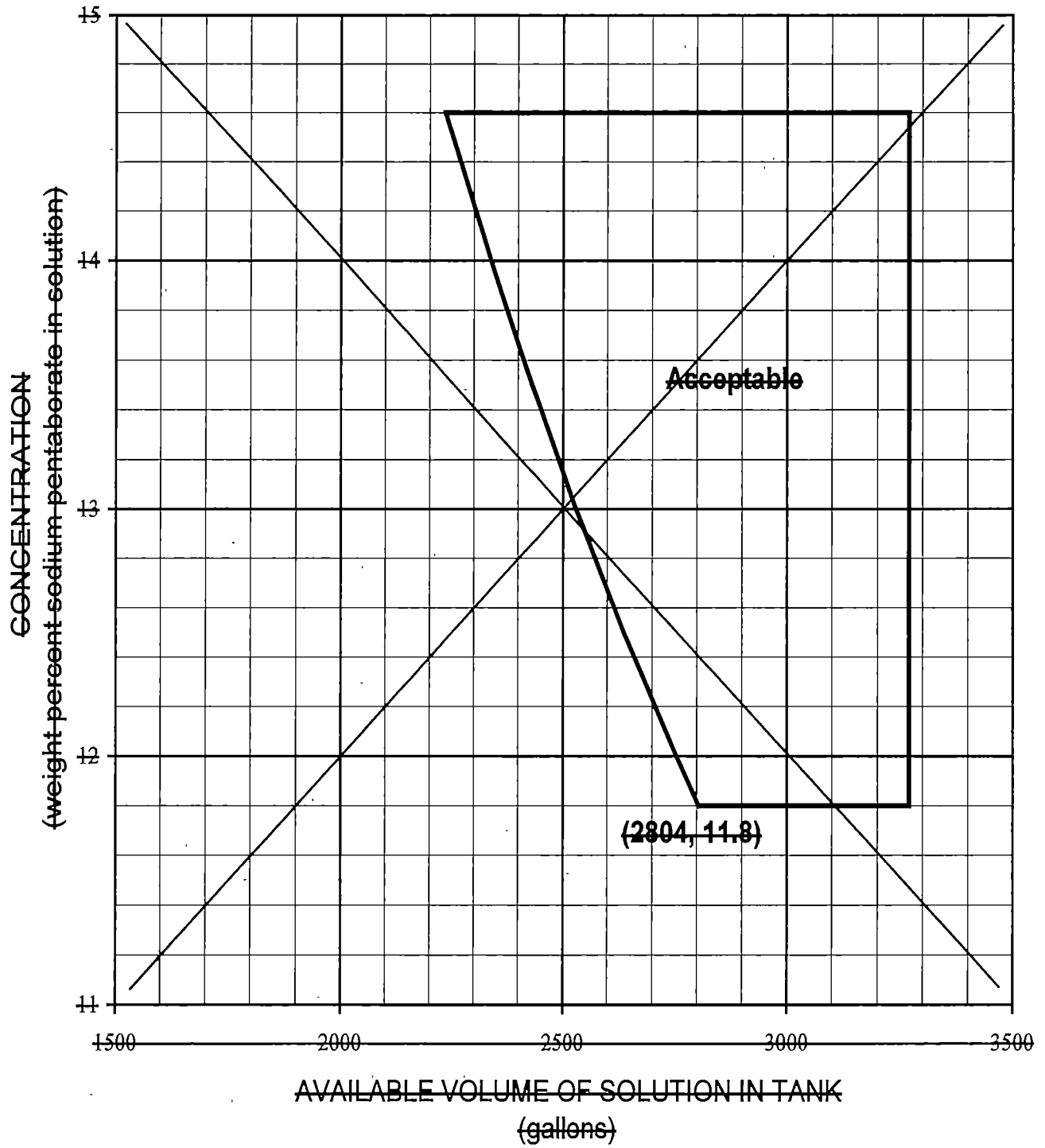


Figure 3.1.7-1 (page 1 of 1)
Sodium Pentaborate Solution Volume
Versus Concentration Requirements

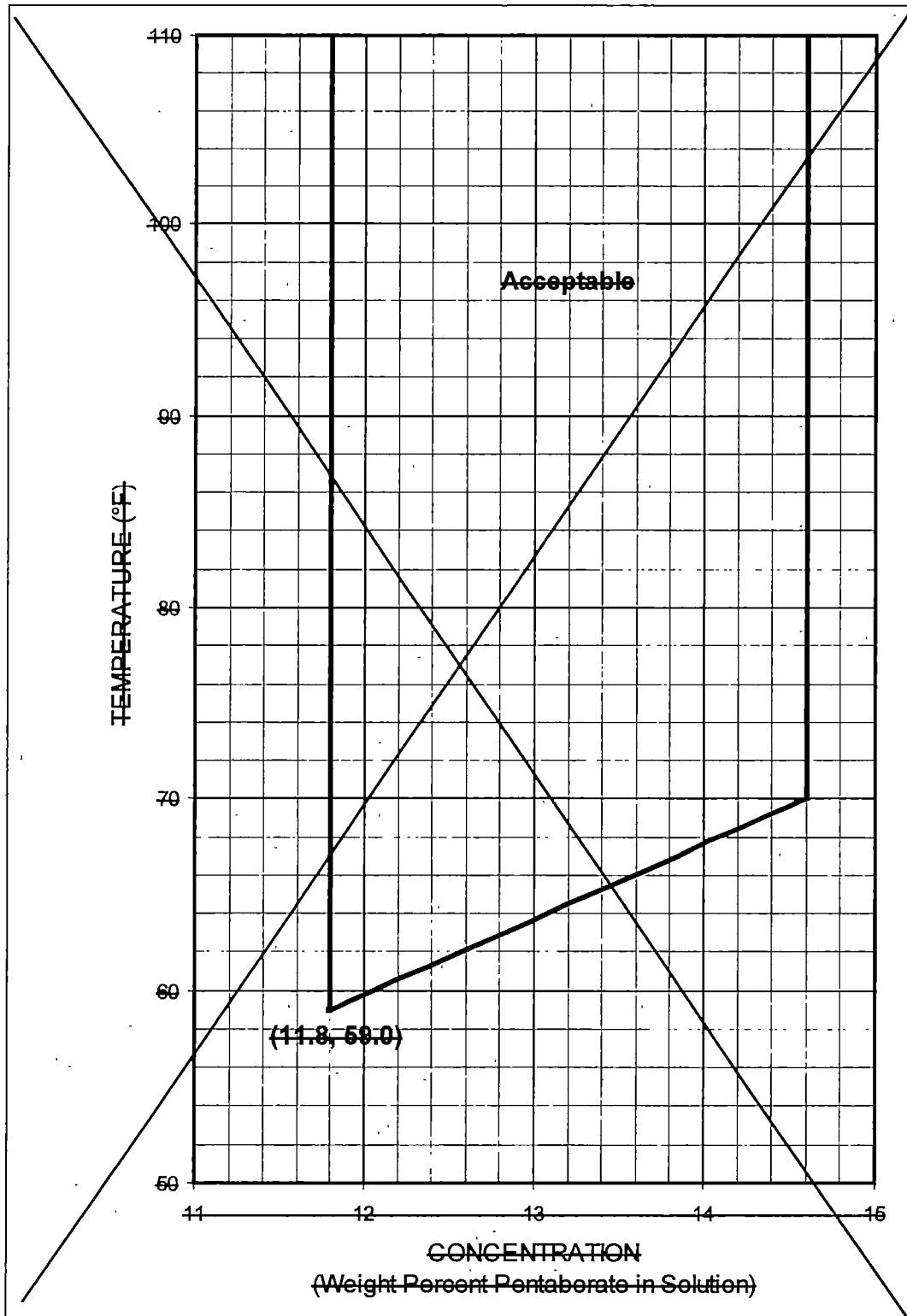


Figure 3.1.7-2 (page 1 of 1)
Sodium Pentaborate Solution Temperature Versus Concentration
Requirements

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 ~~Soram Discharge Volume (SDV) Vent and Drain Valves~~

LCO 3.1.8 Each SDV vent and drain valve shall be OPERABLE.

APPLICABILITY: ~~MODES 1 and 2.~~

ACTIONS

NOTES

1. ~~Separate Condition entry is allowed for each SDV vent and drain line.~~
2. ~~An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SDV vent or drain lines with one valve inoperable.	A.1 Isolate the associated line.	7 days
B. One or more SDV vent or drain lines with both valves inoperable.	B.1 Isolate the associated line.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met on vent and drain valves closed during the performance of SR 3.1.8.2.</p> <hr/> <p>Verify each SDV vent and drain valve is open.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.2	<p>Cycle each SDV vent and drain valve to the fully closed and fully open position.</p>	In accordance with the INSERVICE TESTING PROGRAM
SR 3.1.8.3	<p>Verify each SDV vent and drain valve:</p> <ul style="list-style-type: none"> a. Closes in \leq 30 seconds after receipt of an actual or simulated soram signal; and b. Opens when the actual or simulated soram signal is reset. 	In accordance with the Surveillance Frequency Control Program

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~~3.2 POWER DISTRIBUTION LIMITS~~

~~3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)~~

~~LCO 3.2.1 All APLHGRs shall be less than or equal to the limits specified in the COLR.~~

~~APPLICABILITY: THERMAL POWER \geq 21.7% RTP.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 21.7% RTP.	4 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.2.1.1 Verify all APLHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after \geq 21.7% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

~~3.2 POWER DISTRIBUTION LIMITS~~

~~3.2.2 MINIMUM CRITICAL POWER RATIO (MCP)~~

~~LCO 3.2.2 All MCPs shall be greater than or equal to the MCP operating limits specified in the COLR.~~

~~APPLICABILITY: THERMAL POWER \geq 21.7% RTP.~~

ACTIONS

<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
A. Any MCP not within limits.	A.1 Restore MCP(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $<$ 21.7% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

<u>SURVEILLANCE</u>	<u>FREQUENCY</u>
SR 3.2.2.1 Verify all MCPs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after \geq 21.7% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

<u>SURVEILLANCE</u>		<u>FREQUENCY</u>
SR 3.2.2.2	Determine the MCPR limits.	Once within 72 hours after each completion of SR 3.1.4.1. <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.2.

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3.3 INSTRUMENTATION

3.3.1.4 Reactor Protection System (RPS) Instrumentation

~~LCO 3.3.1.4 The RPS instrumentation for each Function in Table 3.3.1.1-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.1.1-1.~~

ACTIONS

NOTE

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip.	12 hours
	<u>OR</u>	
	A.2 Place associated trip system in trip.	12 hours
B. One or more Functions with one or more required channels inoperable in both trip systems.	B.1 Place channel in one trip system in trip.	6 hours
	<u>OR</u>	
	B.2 Place one trip system in trip.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One or more Functions with RPS trip capability not maintained.	G.1 Restore RPS trip capability.	4 hour
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Enter the Condition referenced in Table 3.3.1.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	E.1 Reduce THERMAL POWER to < 26% RTP.	4 hours +
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Be in MODE 2.	8 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1 Be in MODE 3.	12 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	H.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.2	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 12 hours after THERMAL POWER \geq 21.7% RTP.</p> <hr/> <p>Verify the absolute difference between the Average Power Range Monitor (APRM) channels and the calculated power is \leq 2% RTP plus any gain adjustment required by LCO 3.4.1, "Recirculation Loops Operating," while operating at \geq 21.7% RTP.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	Perform a functional test of each automatic scram contactor.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.4	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</p> <hr/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

~~SURVEILLANCE REQUIREMENTS (continued)~~

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.6	Verify the Source Range Monitor (SRM) and Intermediate Range Monitor (IRM) channels overlap.	Prior to withdrawing SRMs from the fully inserted position
SR 3.3.1.1.7	<p style="text-align: center;">NOTE</p> <p>Only required to be met during entry into MODE 2 from MODE 1.</p> <hr/> <p>Verify the IRM and APRM channels overlap.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.10	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.11	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.1.12</p> <hr/> <p style="text-align: center;">NOTES</p> <hr/> <p>1. Neutron detectors are excluded.</p> <p>2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</p> <hr/> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.1.13</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.1.14</p> <hr/> <p style="text-align: center;">NOTES</p> <hr/> <p>1. Neutron detectors are excluded.</p> <p>2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</p> <hr/> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.1.15</p> <p>Perform LOGIC SYSTEM FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.1.16</p> <p>Verify Turbine Stop Valve Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure Low Functions are not bypassed when THERMAL POWER is $\geq 26\%$ RTP.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.17	Adjust the channel to conform to a calibrated flow signal.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.18	Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.19	Verify the RPS logic system response time is within limits.	In accordance with the Surveillance Frequency Control Program

Table 3-3.1.1.1 (page 1 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1—Intermediate Range Monitors					
a—Neutron Flux—High	2	2	G	SR 3-3.1.1.1 SR 3-3.1.1.4 SR 3-3.1.1.6 SR 3-3.1.1.7 SR 3-3.1.1.14 SR 3-3.1.1.15 SR 3-3.1.1.19	≤ 125/125 divisions of full scale
	3 ^(a)	2	H	SR 3-3.1.1.1 SR 3-3.1.1.5 SR 3-3.1.1.14 SR 3-3.1.1.15 SR 3-3.1.1.19	≤ 125/125 divisions of full scale
b—Inop	2	2	G	SR 3-3.1.1.4 SR 3-3.1.1.15 SR 3-3.1.1.19	NA
	3 ^(a)	2	H	SR 3-3.1.1.5 SR 3-3.1.1.15 SR 3-3.1.1.19	NA
2—Average Power Range Monitors					
a—Neutron Flux—Upset, Startup	2	2	G	SR 3-3.1.1.1 SR 3-3.1.1.4 SR 3-3.1.1.7 SR 3-3.1.1.9 SR 3-3.1.1.12 SR 3-3.1.1.15 SR 3-3.1.1.19	≤ 16.6% RTP
	4	2	F	SR 3-3.1.1.1 SR 3-3.1.1.2 SR 3-3.1.1.3 SR 3-3.1.1.8 SR 3-3.1.1.9 SR 3-3.1.1.12 SR 3-3.1.1.15 SR 3-3.1.1.17 SR 3-3.1.1.19	≤ (0.55W + 87.7) ^{(b)(c)}

(Continued)

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b) When reset for single loop operation per LCO 3-4.1, "Recirculation Loops Operating," the following Allowable Value applies:

$$\leq (0.55W + 81.4) \text{ }^{(c)}$$

The trip setpoints may be reset by adjusting APRM gain or by recalibrating the APRMs.

(c) W is equal to the percentage of the drive flow, where 100% drive flow is that required to achieve 100% core flow at 100% RTP.

Table 3.3.1.1.1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2 - Average Power Range Monitors (continued)					
c - High Value Clamp	4	2	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.15 SR 3.3.1.1.18	≤ 121.6% RTP
d - Inop	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.9 SR 3.3.1.1.15 SR 3.3.1.1.18	NA
3 - Reactor Vessel Steam Dome Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.18 SR 3.3.1.1.19	≤ 1060.2 psig
4 - Reactor Vessel Water Level - Low	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.18 SR 3.3.1.1.19	≥ 165.6 inches
5 - Main Steam Isolation Valve - Closure	4	4	F	SR 3.3.1.1.3 SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.19	≤ 10% closed
6 - Drywell Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.19	≤ 2.2 psig

(continued)

Table 3.3.1.1.1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION-D-4	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7—Soram Discharge Volume Water Level—High					
a—Resistance Temperature Detector	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.43 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46	≤760 ft— 3.0 inches
	3 ^(a)	2	H	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.43 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46	≤760 ft— 3.0 inches
b—Float Switch	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46	≤760 ft— 2.8 inches
	3 ^(a)	2	H	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46	≤760 ft— 2.8 inches
8—Turbine Stop Valve Closure	≥26% RTP	4	F	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46 SR 3.3.1.1.49	≤10% closed †
9—Turbine Control Valve Fast Closure, Trip Oil Pressure—Low	≥26% RTP	2	F	SR 3.3.1.1.3 SR 3.3.1.1.40 SR 3.3.1.1.44 SR 3.3.1.1.45 SR 3.3.1.1.46 SR 3.3.1.1.49	≥465 psig †
10—Reactor Mode Switch—Shutdown Position	1,2	4	G	SR 3.3.1.1.13 SR 3.3.1.1.15	NA
	3 ^(a)	4	H	SR 3.3.1.1.13 SR 3.3.1.1.15	NA
11—Manual Soram	1,2	4	G	SR 3.3.1.1.9 SR 3.3.1.1.15	NA
	3 ^(a)	4	H	SR 3.3.1.1.9 SR 3.3.1.1.15	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

~~3.3 INSTRUMENTATION~~

~~3.3.1.2 Source Range Monitor (SRM) Instrumentation~~

~~LCO 3.3.1.2 The SRM instrumentation in Table 3.3.1.2-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.1.2-1.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRMs inoperable in MODE 2 with Intermediate Range Monitors (IRMs) on Range 2 or below.	A.1 Restore required SRMs to OPERABLE status.	4 hours
B. Three required SRMs inoperable in MODE 2 with IRMs on Range 2 or below.	B.1 Suspend control rod withdrawal.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. One or more required SRMs inoperable in MODE 3 or 4.</p>	<p>D.1 Fully insert all insertable control rods.</p> <p><u>AND</u></p> <p>D.2 Place reactor mode switch in the shutdown position.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. One or more required SRMs inoperable in MODE 5.</p>	<p>E.1 Suspend CORE ALTERATIONS except for control rod insertion.</p> <p><u>AND</u></p> <p>E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.</p>	<p>Immediately</p> <p>Immediately</p>

SURVEILLANCE REQUIREMENTS

NOTE

Refer to Table 3.3.1.2-1 to determine which SRs apply for each applicable MODE or other specified conditions.

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.2.1 Perform CHANNEL CHECK.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.2.2 <u>NOTES</u></p> <p>1. Only required to be met during CORE ALTERATIONS.</p> <p>2. One SRM may be used to satisfy more than one of the following:</p> <hr/> <p>Verify an OPERABLE SRM detector is located in:</p> <p>a. The fueled region;</p> <p>b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and</p> <p>c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.2.3 Perform CHANNEL CHECK.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.2.4</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant.</p> <hr/> <p>Verify count rate is ≥ 3.0 cps.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.2.5</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.2.6</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be performed until 12 hours after IRMs on Range 2 or below.</p> <hr/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.2.7</p> <hr/> <p style="text-align: center;">NOTES</p> <p>1. Neutron detectors are excluded.</p> <p>2. Not required to be performed until 12 hours after IRMs on Range 2 or below.</p> <hr/> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

Table 3.3.1.2.1 (page 1 of 1)
Source Range Monitor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1—Source Range Monitor	2 ^(a)	3	SR-33121 SR-33124 SR-33126 SR-33127
	3,4	3	SR-33123 SR-33124 SR-33126 SR-33127
	5	2 ^{(b)(c)}	SR-33121 SR-33122 SR-33124 SR-33126 SR-33127

(a) With IRMs on Range 2 or below.

(b) Only one SRM channel is required to be OPERABLE during spiral offload or reload when the fueled region includes only that SRM detector.

(c) Special movable detectors may be used in place of SRMs if connected to normal SRM circuits.

~~3.3 INSTRUMENTATION~~

~~3.3.2.1 Control Rod Block Instrumentation~~

~~LCO 3.3.2.1 The control rod block instrumentation for each Function in Table 3.3.2.1-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.2.1-1.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Rod Block Monitor (RBM) channel inoperable.	A.1 Restore RBM channel to OPERABLE status.	24 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Two RBM channels inoperable.	B.1 Place one RBM channel in trip.	1 hour
C. Red Worth Minimizer (RWM) inoperable during reactor startup.	C.1 Suspend control rod movement except by scram. <u>OR</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. (continued)</p>	<p>C.2.1.1 Verify ≥ 12 rods withdrawn.</p> <p><u>OR</u></p> <p>C.2.1.2 Verify by administrative methods that startup with RWM inoperable has not been performed in the last calendar year.</p> <p><u>AND</u></p> <p>C.2.2 Verify movement of control rods is in compliance with Banked Position Withdrawal Sequence (BPWS) by a second licensed operator or other qualified member of the technical staff.</p>	<p>Immediately</p> <p>Immediately</p> <p>During control rod movement</p>
<p>D. RWM inoperable during reactor shutdown.</p>	<p>D.1 Verify movement of control rods is in compliance with BPWS by a second licensed operator or other qualified member of the technical staff.</p>	<p>During control rod movement</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more Reactor Mode Switch Shutdown Position channels inoperable.	E.1 Suspend control rod withdrawal.	Immediately
	<u>AND</u> E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block Function.
2. When an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

SURVEILLANCE	FREQUENCY
SR 3.3.2.1.1 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.1.2 <u>NOTE</u></p> <p>Not required to be performed until 1 hour after any control rod is withdrawn at $\leq 10\%$ RTP in MODE 2.</p> <hr style="border: 0.5px solid black;"/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.3 <u>NOTE</u></p> <p>Not required to be performed until 1 hour after THERMAL POWER is $\leq 10\%$ RTP in MODE 1.</p> <hr style="border: 0.5px solid black;"/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.4 <u>NOTE</u></p> <p>Neutron detectors are excluded.</p> <hr style="border: 0.5px solid black;"/> <p>Verify the RBM:</p> <ul style="list-style-type: none"> a. Low Power Range—Upscale Function is not bypassed when THERMAL POWER is $\geq 20\%$ and $< 64\%$ RTP. b. Intermediate Power Range—Upscale Function is not bypassed when THERMAL POWER is $\geq 64\%$ and $< 84\%$ RTP. c. High Power Range—Upscale Function is not bypassed when THERMAL POWER is $\geq 84\%$ RTP. 	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.1.5</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Neutron detectors are excluded.</p> <hr/> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.6</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be performed until 1 hour after reactor mode switch is in the shutdown position.</p> <hr/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.7</p> <p>Verify control rod sequences input to the RWM are in conformance with BPWS.</p>	<p>Prior to declaring RWM OPERABLE following loading of sequence into RWM</p>

Control Rod Block Instrumentation
3.3.2.4

Table 3.3.2.4.1 (page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1 - Rod Block Monitor				
a - Low Power Range - Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.5	≤ 115.5/125 divisions of full scale
b - Intermediate Power Range - Upscale	(b)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.5	≤ 109.7/125 divisions of full scale
c - High Power Range - Upscale	(c),(d)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.5	≤ 105.9/125 divisions of full scale
d - Inop	(d),(e)	2	SR 3.3.2.1.1	NA
e - Downscale	(d),(e)	2	SR 3.3.2.1.1 SR 3.3.2.1.5	NA
f - Bypass Time Delay	(d),(e)	2	SR 3.3.2.1.1 SR 3.3.2.1.5	≤ 2.0 seconds
2 - Rod Worth Minimizer				
	(f),(g)	4	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.7	NA
3 - Reactor Mode Switch - Shutdown Position				
	(g)	2	SR 3.3.2.1.6	NA

(a) THERMAL POWER ≥ 30% and < 65% RTP and MCPR less than the limit specified in the COLR

(b) THERMAL POWER ≥ 65% and < 85% RTP and MCPR less than the limit specified in the COLR

(c) THERMAL POWER ≥ 85% and < 90% RTP and MCPR less than the limit specified in the COLR

(d) THERMAL POWER ≥ 90% RTP and MCPR less than the limit specified in the COLR

(e) THERMAL POWER ≥ 30% and < 90% RTP and MCPR less than the limit specified in the COLR

(f) With THERMAL POWER ≤ 10% RTP, except during the reactor shutdown process if the coupling of each withdrawn control rod has been confirmed

(g) Reactor mode switch in the shutdown position

~~3.3 INSTRUMENTATION~~

~~3.3.3.1 Post Accident Monitoring (PAM) Instrumentation~~

~~LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1.1 shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each Function. For Function 6, Separate Condition entry is allowed for each penetration flow path.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

~~(continued)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E. Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1 Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

NOTE

These SRs apply to each Function in Table 3.3.3.1 1.

SURVEILLANCE	FREQUENCY
SR 3.3.3.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.1.2 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D-1
1 - Reactor Steam Dome Pressure	2	5
2 - Reactor Vessel Water Level		
a - Wide Range	2	5
b - Fuel Zone	2	5
3 - Suppression Pool Water Level	2	5
4 - Drywell Pressure		
a - Narrow Range	2	5
b - Wide Range	2	5
5 - Primary Containment Area Radiation		
a - Drywell	2	5
b - Suppression Chamber	2	5
6 - PCIV Position	2 per penetration flow path (a)(b)	5

~~(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.~~

~~(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.~~

~~3.3 INSTRUMENTATION~~

~~3.3.3.2 Remote Shutdown System~~

~~LCO 3.3.3.2 The Remote Shutdown System Functions shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each Function.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.3.3.2.1 Verify each required control circuit and transfer switch is capable of performing the intended function.	In accordance with the Surveillance Frequency Control Program

~~(continued)~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.3.2.2 Perform CHANNEL CALIBRATION for each required instrumentation channel.	In accordance with the Surveillance Frequency Control Program

~~3.3 INSTRUMENTATION~~

~~3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation~~

~~LCO 3.3.4.1 a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:~~

- ~~1. Turbine Stop Valve (TSV) Closure; and~~
- ~~2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure Low.~~

OR

~~b. LCO 3.2.2 "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.~~

APPLICABILITY: ~~THERMAL POWER ≥ 26% RTP.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Restore channel to OPERABLE status.	72 hours
	<u>OR</u> A.2 <u>NOTE</u> Not applicable if inoperable channel is the result of an inoperable breaker.	
	Place channel in trip.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more Functions with EOG RPT trip capability not maintained.</p> <p><u>AND</u></p> <p>MCPR limit for inoperable EOG RPT not made applicable.</p>	<p>B.1 Restore EOG RPT trip capability.</p> <p><u>OR</u></p>	<p>2 hours</p>
	<p>B.2 Apply the MCPR limit for inoperable EOG RPT as specified in the COLR.</p>	<p>2 hours</p>
<p>G. Required Action and associated Completion Time not met.</p>	<p>C.1 Remove the associated recirculation pump from service.</p> <p><u>OR</u></p>	<p>4 hours</p>
	<p>C.2 Reduce THERMAL POWER to < 26% RTP.</p>	<p>4 hours</p>

SURVEILLANCE REQUIREMENTS

NOTE

~~When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOG RPT trip capability.~~

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.1.1 Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.1.2 Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <p>TSV Closure: ≤ 10% closed; and</p> <p>TCV Fast Closure, Trip Oil Pressure Low: ≥ 465 psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.3 Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.4 Verify TSV Closure and TCV Fast Closure, Trip Oil Pressure Low Functions are not bypassed when THERMAL POWER is ≥ 26% RTP.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.5 Verify the EOG RPT SYSTEM RESPONSE TIME is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.3 INSTRUMENTATION~~

~~3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation~~

~~LCO 3.3.4.2 Two channels in a trip system for each ATWS RPT instrumentation Function listed below shall be OPERABLE:~~

- ~~a. Reactor Vessel Water Level Low Low; and~~
- ~~b. Reactor Steam Dome Pressure High.~~

~~APPLICABILITY: MODE 1.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function with one or more channels inoperable.	A.1 Restore ATWS RPT trip capability.	72 hours
B. Both Functions with ATWS RPT trip capability not maintained.	B.1 Restore ATWS RPT trip capability for one Function.	4 hour
C. Required Action and associated Completion Time not met.	C.1 Remove the associated recirculation pump from service. OR C.2 Be in MODE 2.	8 hours 8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.1	Perform CHANNEL CHECK on the Reactor Vessel Water Level — Low Low Function.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level — Low Low ≥ 412.65 inches; and b. Reactor Steam Dome Pressure — High: ≤ 4154.2 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program

~~3.3 INSTRUMENTATION~~

~~3.3.5.1 Emergency Core Cooling System (ECSS) Instrumentation~~

~~LCO 3.3.5.1 The ECSS instrumentation for each Function in Table 3.3.5.1-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.5.1-1.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.1-1 for the channel.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. As required by Required Action A.1 and referenced in Table 3.3.5.1-1</p>	<p>B.1 <u>NOTE</u> Only applicable for Functions 1.a, 1.b, 2.a, and 2.b.</p> <hr/> <p>Declare supported feature(s) inoperable when redundant feature(s) ECCS initiation capability is inoperable.</p>	<p>1 hour from discovery of loss of initiation capability for feature(s) in two or more low pressure ECCS subsystems</p>
	<p><u>AND</u></p>	
	<p>B.2 <u>NOTE</u> Only applicable for Functions 3.a and 3.b.</p> <hr/> <p>Declare High Pressure Coolant Injection (HPCI) System inoperable.</p>	<p>1 hour from discovery of loss of HPCI initiation capability</p>
	<p><u>AND</u></p> <p>B.3 Place channel in trip.</p>	<p>24 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.</p>	<p>G.1 NOTE Only applicable for Functions 1.e, 1.e, 2.e and 2.e.</p> <hr/> <p>Declare supported feature(s) inoperable.</p>	<p>1 hour from discovery of loss of initiation capability for two or more low pressure ECGS subsystems</p>
	<p><u>AND</u></p> <p>G.2 NOTE Only applicable for Functions 2.g, 2.h, 2.i, and 2.j.</p> <hr/> <p>Declare Low Pressure Coolant Injection (LPCI) subsystem inoperable.</p>	<p>1 hour from discovery of loss of Loop Selection capability</p>
	<p><u>AND</u></p> <p>G.3 Restore channel to OPERABLE status.</p>	<p>24 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D: As required by Required Action A.1 and referenced in Table 3.3.5.1-1.</p>	<p>D.1 <u>NOTE</u> Only applicable if HPCI pump suction is not aligned to the suppression pool. Declare HPCI System inoperable.</p>	<p>1 hour from discovery of loss of HPCI suction transfer capability</p>
	<p><u>AND</u></p>	
	<p>D.2.1 Place channel in trip.</p>	<p>24 hours</p>
	<p><u>OR</u> D.2.2 Align the HPCI pump suction to the suppression pool.</p>	<p>24 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.</p>	<p>E.1 <u>NOTE</u> Only applicable for Functions 1.d and 2.f.</p> <hr/> <p>Declare supported feature(s) inoperable.</p> <p><u>AND</u></p> <p>E.2 Restore channel to OPERABLE status.</p>	<p>1 hour from discovery of loss of initiation capability for two or more minimum flow valves in the low pressure EGCS subsystems</p> <p>7 days</p>
<p>F. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.</p>	<p>F.1 Restore channel to OPERABLE status.</p>	<p>1 hour</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.</p>	<p>G.1 Declare Automatic Depressurization System (ADS) valves inoperable.</p>	<p>1 hour from discovery of loss of ADS initiation capability in both trip logics</p>
	<p><u>AND</u></p> <p>G.2 Place channel in trip.</p>	<p>96 hours from discovery of inoperable channel concurrent with HPCI or Reactor Core Isolation Cooling (RCIC) inoperable</p> <p><u>AND</u></p> <p>8 days</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>H. As required by Required Action A.1 and referenced in Table 3.3.5.1.1.</p>	<p>H.1 Declare ADS valves inoperable.</p> <p><u>AND</u></p> <p>H.2 Restore channel to OEPURABLE status.</p>	<p>1 hour from discovery of loss of ADS initiation capability in both trip logics</p> <p>96 hours from discovery of inoperable channel concurrent with HPCI or RCIG inoperable</p> <p><u>AND</u></p> <p>8 days</p>
<p>I. Required Action and associated Completion Time of Condition B, C, D, E, F, G, or H not met.</p>	<p>I.1 Declare associated supported feature(s) inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.5.1.1 to determine which SRs apply for each ECGS Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 1.d, 2.f, 3.c, 3.d, 3.e, and 3.f; and (b) for up to 6 hours for Functions other than 1.d, 2.f, 3.c, 3.d, 3.e, and 3.f provided the associated Function (or the redundant Function for Functions 4 and 5) maintains ECGS initiation or loop selection capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.3	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.8	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.9	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.1.1 (page 1 of 5)
Emergency Core-Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	
1—Core Spray System						
a—Reactor Vessel Water Level—Low-Low-Low	1,2,3	4 ^(a)	B	SR-3.3.5.1.1 SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≥ 38.3 inches	✗
b—Drywell Pressure—High	1,2,3	4 ^(a)	B	SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≤ 2.10 psig	✗
c—Reactor Steam-Dome Pressure—Low (Injection Permissive)	1,2,3	4	C	SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≥ 363.3 psig and ≤ 485.4 psig	
d—Core Spray Pump Discharge Flow—Low (Bypass)	1,2,3	1 per pump	E	SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≥ 256.6 gpm and ≤ 2382.1 gpm	✗
e—Core Spray Pump Start Time-Delay Relay	1,2,3	1 per pump	C	SR-3.3.5.1.8 SR-3.3.5.1.9	≥ 2.6 seconds and ≤ 8.8 seconds	✗
f—4.16 kV Emergency Bus Sequential Loading Relay	1,2,3	1 per pump	F	SR-3.3.5.1.5 SR-3.3.5.1.6 SR-3.3.5.1.9	≤ 3500 V	✗
2—Low-Pressure Coolant Injection (LPCI) System						
a—Reactor Vessel Water Level—Low-Low-Low	1,2,3	4	B	SR-3.3.5.1.1 SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≥ 38.3 inches	✗
b—Drywell Pressure—High	1,2,3	4	B	SR-3.3.5.1.3 SR-3.3.5.1.8 SR-3.3.5.1.9	≤ 2.10 psig	

(continued)

(a) Also required to initiate the associated Diesel Generator (DG)

✗

Table 3.3.5.1.1 (page 2 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2 - LPCI System (continued)					
c - Reactor Steam Dome Pressure - Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 382.3 psig and ≤ 485.1 psig
d - Reactor Vessel Shroud Level - Low	1,2,3	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.9	≥ 40.80 inches
e - Low Pressure Coolant Injection Pump Start - Time Delay Relay Pumps A & B	1,2,3	1 per pump	C	SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 8.8 seconds and ≤ 11.2 seconds
Pumps C & D					≥ 13.8 seconds and ≤ 32.5 seconds
f - Low Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	1,2,3	1 per loop	E	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 471.8 gpm and ≤ 3676.6 gpm
g - LPCI Loop Select - Reactor Vessel Water Level - Low-Low	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.6 SR 3.3.5.1.9	≥ 112.85 inches
h - LPCI Loop Select - Reactor Steam Dome Pressure - Low	1,2,3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.9	≥ 887 psig

(continued)

Table 3.3.5.4.1 (page 3 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2 - LPCI System (continued)					
i - LPCI Loop Select - Recirculation Pump Differential Pressure	1,2,3	4 per pump	G	SR-335-1.1 SR-335-1.2 SR-335-1.3 SR-335-1.9	≤ 7.8 psig
j - LPCI Loop Select - Recirculation Riser Differential Pressure	1,2,3	4	G	SR-335-1.1 SR-335-1.2 SR-335-1.4 SR-335-1.9	≥ 0.13 psig and ≤ 2.07 psig
k - 4.16 kV Emergency Bus Sequential Loading Relay	1,2,3	2	F	SR-335-1.5 SR-335-1.8 SR-335-1.9	≤ 3500 V
3 - High Pressure Coolant Injection (HPCI) System					
a - Reactor Vessel Water Level - Low-Low	1, 2(b), 3(b)	4	B	SR-335-1.1 SR-335-1.3 SR-335-1.6 SR-335-1.9	≥ 112.65 inches
b - Drywell Pressure - High	1, 2(b), 3(b)	4	B	SR-335-1.3 SR-335-1.8 SR-335-1.9	≤ 2.10 psig
c - Reactor Vessel Water Level - High	1, 2(b), 3(b)	2	G	SR-335-1.1 SR-335-1.3 SR-335-1.6 SR-335-1.9	≤ 214.8 inches
d - Condensate Storage Tank Level - Low	1, 2(b), 3(b)	2	D	SR-335-1.3 SR-335-1.8 SR-335-1.9	≥ 11.8 inches
(continued)					

(b) - With reactor steam dome pressure > 450 psig.

Table 3.3.5.1.1 (page 4 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3—HPCI System (continued)					
e—Suppression Pool Water Level—High	4 ₁ 2 (b), 3 (b)	2	D	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≤5.0 inches
f—High Pressure Coolant Injection Pump Discharge Flow—Low (Bypass)	4 ₁ 2 (b), 3 (b)	4	E	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥264.2 gpm and ≤2025.4 gpm
4—Automatic Depressurization System (ADS) Trip Logic A					
a—Reactor Vessel Water Level—Low-Low-Low	4 ₁ 2 (c), 3 (e)	2	G	SR 3.3.5.1.4 SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥38.2 inches
b—Automatic Depressurization System Timer	4 ₁ 2 (c), 3 (e)	4	H	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≤125 seconds
c—Reactor Vessel Water Level—Low (Confirmatory)	4 ₁ 2 (c), 3 (e)	4	G	SR 3.3.5.1.4 SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥166.4 inches
d—Core Spray Pump Discharge Pressure—High	4 ₁ 2 (c), 3 (e)	2	H	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥144.2 psig and ≤177.0 psig
e—Low Pressure Coolant Injection Pump Discharge Pressure—High	4 ₁ 2 (c), 3 (e)	4	H	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥103.8 psig and ≤147.0 psig

(continued)

(b) With reactor steam dome pressure > 150 psig

(c) With reactor steam dome pressure > 100 psig

Table 3.3.5.1.1 (page 5 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE		
§-ADS Trip Logic-B							
a- Reactor Vessel Water Level—Low-Low-Low	1, 2(c), 3(e)	2	G	SR-33511 SR-33513 SR-33518 SR-33519	≥ 38.3 inches	†	
b- Automate Depressurization System Timer	1, 2(c), 3(e)	4	H	SR-33513 SR-33518 SR-33519	≤ 125 seconds	†	
c- Reactor Vessel Water Level—Low (Confirmatory)	1, 2(c), 3(e)	4	G	SR-33511 SR-33513 SR-33518 SR-33519	≥ 168.1 inches	†	
d- Core Spray Pump Discharge Pressure—High	1, 2(c), 3(e)	2	H	SR-33513 SR-33518 SR-33519	≥ 144.2 psig and ≤ 177.0 psig	†	
e- Low Pressure Coolant Injection Pump Discharge Pressure—High	1, 2(c), 3(e)	4	H	SR-33513 SR-33518 SR-33519	≥ 103.8 psig and ≤ 147.0 psig	†	
(c) With reactor steam dome pressure > 400 psig							†

3.3 INSTRUMENTATION

3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

~~LCO 3.3.5.2 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.5.2-1.~~

ACTIONS

NOTE

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	B.1 Declare associated penetration flow path(s) incapable of automatic isolation.	Immediately
	<u>AND</u> B.2 Calculate DRAIN TIME.	Immediately
C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	C.1 Place Channel in trip.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1 Restore channel to OPERABLE status.	24 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Declare associated ECGS injection/spray subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

Refer to Table 3.3.5.2-1 to determine which SRs apply for each ECGS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

RPV Water Inventory Control Instrumentation
3.3.5.2

Table 3.3.5.2.1 (page 1 of 1)
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1 - Core Spray System					
a - Reactor Steam Dome Pressure - Low (Injection Permissive)	4, 5	4	C	SR 3.3.5.2.2	≤ 485.4 psig
b - Core Spray Pump Discharge Flow - Low (Bypass)	4, 5	1 per Pump ^(a)	D	SR 3.3.5.2.2	≥ 358.8 gpm and ≤ 2382.4 gpm
2 - Low Pressure Coolant Injection (LPCI) System					
a - Reactor Steam Dome Pressure - Low (Injection Permissive)	4, 5	4	C	SR 3.3.5.2.2	≤ 485.4 psig
b - Low Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	4, 5	1 per loop ^(a)	D	SR 3.3.5.2.2	≥ 471.8 gpm and ≤ 3678.8 gpm
3 - RHR System Isolation					
a - Reactor Vessel Water Level - Low	(b)	2 in one-trip system	B	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 185.6 inches
4 - Reactor Water Cleanup (RWCU) System Isolation					
a - Reactor Vessel Water Level - Low Low	(b)	2 in one-trip system	B	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 112.65 inches

(a) Associated with an ECGS subsystem required to be OPERABLE by LCO 3.5.2, "Reactor Pressure Vessel Water Inventory Control."
 (b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.

~~3.3 INSTRUMENTATION~~

~~3.3.5.3 Reactor Core Isolation Cooling (RCIC) System Instrumentation~~

~~LCO 3.3.5.3 The RCIC System instrumentation for each Function in Table 3.3.5.3-1 shall be OPERABLE.~~

APPLICABILITY: ~~MODE 1, MODES 2 and 3 with reactor steam dome pressure > 150 psig.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.3-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.	B.1 Declare RCIC System inoperable.	1 hour from discovery of loss of RCIC initiation capability
	<u>AND</u> B.2 Place channel in trip.	24 hours

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.</p>	<p>C.1 Restore channel to OPERABLE status.</p>	<p>24 hours</p>
<p>D. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.</p>	<p>D.1 <u>NOTE</u> Only applicable if RCIC pump suction is not aligned to the suppression pool.</p> <p>Declare RCIC System inoperable.</p> <p><u>AND</u></p> <p>D.2.1 Place channel in trip.</p> <p><u>OR</u></p> <p>D.2.2 Align RCIC pump suction to the suppression pool.</p>	<p>1 hour from discovery of loss of RCIC suction transfer capability</p> <p>24 hours</p> <p>24 hours</p>
<p>E. Required Action and associated Completion Time of Condition B, C, or D not met.</p>	<p>E.1 Declare RCIC System inoperable.</p>	<p>Immediately</p>



SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.5.3-1 to determine which SRs apply for each RCIG Function. ✕
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 2 and 3; and (b) for up to 6 hours for Function 1 provided the associated Function maintains RCIG initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program ✕
SR 3.3.5.3.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program ✕
SR 3.3.5.3.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program ✕
SR 3.3.5.3.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program ✕
SR 3.3.5.3.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program ✕

Table 3.3.5.3.1 (page 1 of 1)
 Reactor Core Isolation Cooling System Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.4	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1 - Reactor Vessel Water Level - Low/Low	4	B	SR-3.3.5.3.1 SR-3.3.5.3.2 SR-3.3.5.3.3 SR-3.3.5.3.5	≥ 42.66 inches
2 - Reactor Vessel Water Level - High	2	C	SR-3.3.5.3.1 SR-3.3.5.3.2 SR-3.3.5.3.3 SR-3.3.5.3.5	≤ 24.8 inches
3 - Condensate Storage Tank Level - Low	2	D	SR-3.3.5.3.2 SR-3.3.5.3.4 SR-3.3.5.3.5	≥ 11.8 inches

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment Isolation Instrumentation

LCO 3.3.6.1 The primary containment isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 2.a, 2.b, 6.b, and 6.c <u>AND</u> 24 hours for Functions other than Functions 2.a, 2.b, and 6.b, and 6.c
	A.2 <u>NOTE</u> Only applicable for Function 7.a: Inhibit containment spray system.	24 hours

(continued)

Primary Containment Isolation Instrumentation
3.3.6.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	4 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel.	Immediately
D. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	D.1 Isolate associated main steam line (MSL). <u>OR</u> D.2.1 Be in MODE 3. <u>AND</u> D.2.2 Be in MODE 4.	12 hours 12 hours 36 hours
E. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	E.1 Be in MODE 2.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	F.1 Isolate the affected penetration flow path(s).	1 hour
G. [Deleted]		
H. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. <u>OR</u> Required Action and associated Completion Time for Condition F not met.	H.1 Be in MODE 3. <u>AND</u> H.2 Be in MODE 4.	12 hours 36 hours
I. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	I.1 Declare Standby Liquid Control (SLC) System inoperable. <u>OR</u> I.2 Isolate the Reactor Water Cleanup System.	1 hour 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>J. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.</p>	<p>J.1 Initiate action to restore channel to OPERABLE status.</p>	Immediately
	<p><u>OR</u></p> <p>J.2 Initiate action to isolate the Residual Heat Removal (RHR) Shutdown Cooling System.</p>	Immediately
<p>K. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.</p>	<p>K.1 <u>NOTE</u> Only applicable if inoperable channel is not in trip.</p> <p>Declare associated Suppression Pool Cooling/Spray subsystem(s) inoperable.</p>	Immediately
	<p><u>OR</u></p> <p>K.2 <u>NOTE</u> Only applicable if inoperable channel is in trip.</p> <p>Declare Primary Containment inoperable.</p>	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>L. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.</p>	<p>L.1 Isolate the primary containment vent and purge penetration flow paths.</p>	<p>1 hour</p>
	<p><u>OR</u></p> <p>L.2 Establish administrative control of the primary containment vent and purge valves using continuous monitoring of alternate instrumentation.</p>	<p>1 hour</p>

SURVEILLANCE REQUIREMENTS

NOTES

1. ~~Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.~~
2. ~~When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 5.a; and (b) for up to 6 hours for Functions other than 5.a provided the associated Function maintains isolation capability.~~

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.2	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.3	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.4	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.8	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.9	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Primary Containment Isolation Instrumentation
3-3.6.1

Table 3-3.6-1.1 (page 1 of 5)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4 - Main Steam Line Isolation					
a - Reactor Vessel Water Level - Low-Low-Low	1,2,3	2	D	SR 3-3.6-1.4 SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≥ 38.3 inches
b - Main Steam Line Pressure - Low	4	2	E	SR 3-3.6-1.4 SR 3-3.6-1.6 SR 3-3.6-1.9	≥ 821 psig
c - Main Steam Line Flow - High	1,2,3	2 per MSL	D	SR 3-3.6-1.4 SR 3-3.6-1.4 SR 3-3.6-1.6 SR 3-3.6-1.9	≤ 138% rated steam flow
d - Condenser Backpressure - High	1, 2 ^(a) , 3 ^(a)	2	D	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≥ 7.2 inches Hg vacuum
e - Main Steam Line Tunnel Temperature - High	1,2,3	4	D	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.7 SR 3-3.6-1.9	≤ 205 °F
f - Turbine Building Temperature - High	1,2,3	4	D	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.7 SR 3-3.6-1.9	≤ 205 °F

(continued)

(a) When any turbine stop valve is greater than 80% open or when the key locked bypass switch is in the NORM Position.

Primary Containment Isolation Instrumentation
3.3.6.1

Table 3.3.6.1.1 (page 2 of 5)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2 Primary Containment Isolation					
a Reactor Vessel Water Level - Low	1,2,3	2	H	SR 3.3.6.1.1 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≥ 165.8 inches
b Drywell Pressure - High	1,2,3	2	H	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 2.2 psig
c Offgas Vent Stack - High Radiation	1 ^(c) , 2 ^(c) , 3 ^(e)	4	L	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	(b)
d Reactor Building Exhaust Shaft - High Radiation	1,2,3	4	H	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 12.8 mR/hr
e Refueling Floor Exhaust Duct - High Radiation	1,2,3	4	H	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 10.6 mR/hr
3 High Pressure Coolant Injection (HPCI) System Isolation					
a HPCI Steam Line Flow - High	1,2,3	4	F	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 400 inches (inboard) ≤ 140 inches (outboard)

(continued)

(b) Allowable value is determined in accordance with the ODAM.

(c) During venting or purging of primary containment.

Primary Containment Isolation Instrumentation
3.3.6.1

Table 3.3.6.1.1 (page 3 of 5)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3 - HPCI System Isolation (continued)					
b - HPCI Steam Supply Line Pressure - Low	1,2,3	2	F	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≥ 50 psig and ≤ 147.1 psig
c - HPCI Turbine Exhaust Diaphragm Pressure - High	1,2,3	2	F	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≥ 2.5 psig
d - Drywell Pressure - High	1,2,3	4	F	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 2.2 psig
e - Suppression Pool Area Ambient Temperature - High	1,2,3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 153.3°F
f - HPCI Leak Detection Time Delay	1,2,3	4	F	SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	N/A
g - Suppression Pool Area Ventilation Differential Temperature - High	1,2,3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 61.6°F
h - HPCI Equipment Room Temperature - High	1,2,3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 178.3°F
i - HPCI Room Ventilation Differential Temperature - High	1,2,3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 61.6°F

(continued)

Primary Containment Isolation Instrumentation
3-3.6.1

Table 3-3.6-1.1 (page 4 of 5)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4 - Reactor Core Isolation Cooling (RCIC) System Isolation					
a - RCIC Steam Line Flow - High	1,2,3	4	F	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≤ 164 inches (inboard) ≤ 159 inches (outboard)
b - RCIC Steam Supply Line Pressure - Low	1,2,3	2	F	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≥ 50.2 psig
c - RCIC Turbine Exhaust Diaphragm Pressure - High	1,2,3	2	F	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≥ 3.3 psig
d - Drywell Pressure - High	1,2,3	4	F	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	≤ 2.2 psig
e - RCIC Suppression Pool Area Ambient Temperature - High	1,2,3	4	F	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	$\leq 153.3^{\circ}\text{F}$
f - RCIC Leak Detection Time Delay	1,2,3	4	F	SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	N/A
g - RCIC Suppression Pool Area Ventilation Differential Temperature - High	1,2,3	4	F	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	$\leq 51.6^{\circ}\text{F}$
h - RCIC Equipment Room Temperature - High	1,2,3	4	F	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	$\leq 178.3^{\circ}\text{F}$
i - RCIC Room Ventilation Differential Temperature - High	1,2,3	4	F	SR 3-3.6-1.2 SR 3-3.6-1.4 SR 3-3.6-1.8 SR 3-3.6-1.9	$\leq 51.6^{\circ}\text{F}$

(continued)

Primary Containment Isolation Instrumentation
3-3.6.4

Table 3-3.6.4.1 (page 5 of 5)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C-1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5—Reactor Water Cleanup (RWCU) System Isolation					
a—Differential Flow—High	1,2,3	4	F	SR-336-12 SR-336-14 SR-336-18 SR-336-19	≤ 50 gpm
b—Area Temperature—High	1,2,3	1 ^(d)	F	SR-336-12 SR-336-14 SR-336-18 SR-336-19	≤ 132.3°F
c—Area Ventilation Differential Temperature—High	1,2,3	1 ^(d)	F	SR-336-12 SR-336-14 SR-336-18 SR-336-19	≤ 22.5°F ≤ 23.5°F ≤ 34.5°F ≤ 61.5°F
RWCU Pump Room RWCU Pump A Room RWCU Pump B Room RWCU Heat Exch. Room					
d—SLC System Initiation	1,2	1 ^(e)	I	SR-336-19	NA
e—Reactor Vessel Water Level—Low-Low	1,2,3	2	F	SR-336-11 SR-336-14 SR-336-17 SR-336-19	≥ 112.65 inches
f—Area Near TIP Room Ambient Temperature—High	1,2,3	4	F	SR-336-12 SR-336-14 SR-336-18 SR-336-19	≤ 116.7°F
6—Shutdown Cooling System Isolation					
a—Reactor Steam Dome Pressure—High	1,2,3	4	F	SR-336-14 SR-336-15 SR-336-19	≤ 152.7 psig
b—Reactor Vessel Water Level—Low	3	2	I	SR-336-11 SR-336-14 SR-336-18 SR-336-19	≥ 165.8 inches
c—Drywell Pressure—High	1,2,3	2	F	SR-336-14 SR-336-18 SR-336-19	≤ 2.2 psig
7—Containment Cooling System Isolation					
a—Containment Pressure—High	1,2,3	4	K	SR-336-13 SR-336-18 SR-336-19	≥ 1.25 psig

(d) Each Trip System must have either an OPERABLE Function 5-b or an OPERABLE Function 5-c channel in both the RWCU pump area and in the RWCU heat exchanger area.

(e) SLC System Initiation only inputs into one of the two trip systems.

~~3.3 INSTRUMENTATION~~

~~3.3.6.2 Secondary Containment Isolation Instrumentation~~

~~LCO 3.3.6.2 The secondary containment isolation instrumentation for each Function in Table 3.3.6.2-1 shall be OPERABLE.~~

~~APPLICABILITY: According to Table 3.3.6.2-1.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 1 and 2 AND 24 hours for Functions 3 and 4
B. One or more Functions with secondary containment isolation capability not maintained.	B.1 Restore secondary containment isolation capability.	1 hour

~~(continued)~~

Secondary Containment Isolation Instrumentation
3.3.6.2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A or B not met.</p>	<p>C.1.1 Isolate secondary containment.</p> <p style="text-align: center;"><u>OR</u></p>	<p>1 hour</p>
	<p>C.1.2 Declare associated Secondary Containment Isolation Valves/Dampers (SCIV/Ds) inoperable.</p> <p style="text-align: center;"><u>AND</u></p>	<p>1 hour</p>
	<p>C.2.1 Place the associated Standby Gas Treatment (SBGT) subsystem(s) in operation.</p> <p style="text-align: center;"><u>OR</u></p>	<p>1 hour</p>
	<p>C.2.2 Declare associated SBGT subsystem(s) inoperable.</p>	<p>1 hour</p>

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains secondary containment isolation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.6.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.2 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.3 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.4 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.5 Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Secondary Containment Isolation Instrumentation
3.3.6.2

Table 3.3.6.2-1 (page 1 of 1)
Secondary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1—Reactor Vessel Water Level—Low	1,2,3	2	SR-33621 SR-33623 SR-33624 SR-33625	≥ 165.6 inches
2—Drywell Pressure—High	1,2,3	2	SR-33623 SR-33624 SR-33625	≤ 2.2 psig
3—Reactor Building Exhaust Shaft—High Radiation	1,2,3	4	SR-33623 SR-33623 SR-33624 SR-33625	≤ 12.8 mR/hr
4—Refueling Floor Exhaust Duct—High Radiation	1,2,3	4	SR-33622 SR-33623 SR-33624 SR-33625	≤ 10.6 mR/hr

X

X

X

X

~~3.3 INSTRUMENTATION~~

~~3.3.6.3 Low Low Set (LLS) Instrumentation~~

~~LCO 3.3.6.3 The LLS valve instrumentation for each Function in Table 3.3.6.3-1 shall be OPERABLE.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One LLS valve inoperable due to inoperable channel(s).</p>	<p>A.1 Restore channel(s) to OPERABLE status.</p>	<p>24 hours</p>
<p>B. One or more Safety Relief Valves (SRVs) with one Function 3 channel inoperable.</p>	<p>B.1 Restore channel(s) to OPERABLE status.</p>	<p>Prior to entering MODE 2 or 3 from MODE 4</p>
<p>C. <u>NOTE</u> Separate Condition entry is allowed for each SRV.</p> <hr/> <p>One or more SRVs with two or more Function 3 channels inoperable.</p>	<p>C.1 Restore at least two channels per SRV to OPERABLE status.</p>	<p>14 days</p>

(continued)

~~ACTIONS (continued)~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p> <p><u>OR</u></p> <p>Both LLS valves inoperable due to inoperable channels.</p>	<p>D.1 Declare the associated LLS valve(s) inoperable.</p>	<p>Immediately</p>

~~SURVEILLANCE REQUIREMENTS~~

~~NOTES~~

- ~~1. Refer to Table 3.3.6.3-1 to determine which SRs apply for each Function.~~
- ~~2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains LLS initiation capability.~~

SURVEILLANCE	FREQUENCY
<p>SR 3.3.6.3.1 Perform CHANNEL FUNCTIONAL TEST for portion of the channel outside primary containment.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.6.3.2 Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~(continued)~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.3.1 (page 1 of 1)
Low-Low-Set Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1— Reactor Vessel Steam-Dome Pressure—High	1 per LLS-valve	SR-3.3.6.3.2 SR-3.3.6.3.3 SR-3.3.6.3.5	≤1080.21-psig
2— Low-Low-Set Pressure-Setpoints	2 per LLS-valve	SR-3.3.6.3.2 SR-3.3.6.3.4 SR-3.3.6.3.5	Low- Open ≥ 1014-psig and ≤ 1045-psig Close ≥ 803.4-psig and ≤ 825-psig High- Open ≥ 1010-psig and ≤ 1050-psig Close ≥ 803.4-psig and ≤ 830-psig
3— Tailpipe High Pressure	3 per-SRV	SR-3.3.6.3.1 SR-3.3.6.3.5 SR-3.3.6.3.6	≤80-psig

~~3.3 INSTRUMENTATION~~

~~3.3.7.1 Standby Filter Unit (SFU) System Instrumentation~~

~~LCO 3.3.7.1 Two channels of the Control Building Intake Area Radiation High Function shall be OPERABLE.~~

~~APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both channels inoperable.	A.1 Declare associated SFU subsystem(s) inoperable.	1 hour
	<u>OR</u> A.2 Place associated SFU subsystem(s) in the isolation mode.	1 hour

SURVEILLANCE REQUIREMENTS

NOTE

~~When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other channel is OPERABLE.~~

SURVEILLANCE	FREQUENCY
SR 3.3.7.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3 Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 5 mR/hr.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.4 Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

~~3.3 INSTRUMENTATION~~

~~3.3.8.1 Loss of Power (LOP) Instrumentation~~

~~LGO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.~~

~~APPLICABILITY: MODES 1, 2, and 3,
When the associated Diesel Generator is required to be OPERABLE
by LGO 3.8.2, "AC Sources Shutdown."~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each channel.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Function 1 or 3 channels inoperable.	A.1 Place channel in trip.	1 hour
B. One or more Function 2 channels inoperable.	B.1 Declare associated Diesel Generator (DG) inoperable.	1 hour from discovery of loss of initiation capability for feature (c) in one or both divisions
	<u>AND</u>	24 hours
	B.2 Place channel in trip.	

~~(continued)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Required Action and associated Completion Time not met.	G.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.8.1.1 to determine which SRs apply for each LOP Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains DG initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

LOP Instrumentation
3.3.8.4

Table 3.3.8.4.1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1 - 416 kV Emergency Bus Undervoltage (Loss of Voltage)	4	SR 3.3.8.1.2 SR 3.3.8.1.4 SR 3.3.8.1.5	≥ 595 V and ≤ 2375 V
2 - 416 kV Emergency Bus Undervoltage (Degraded Voltage)	4	SR 3.3.8.1.4 SR 3.3.8.1.3 SR 3.3.8.1.5	≥ 3780 V and ≤ 3832 V
a - Bus Undervoltage	4	SR 3.3.8.1.4 SR 3.3.8.1.3 SR 3.3.8.1.5	≥ 7.82 seconds and ≤ 8.5 seconds
b - Time Delay	4	SR 3.3.8.1.4 SR 3.3.8.1.3 SR 3.3.8.1.5	≥ 7.82 seconds and ≤ 8.5 seconds
3 - 416 kV Emergency Transformer Supply Undervoltage	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.5	≥ 2450 V

~~3.3 INSTRUMENTATION~~

~~3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring~~

~~LCO 3.3.8.2 Two RPS Electrical Protection Assemblies (EPAs) shall be OPERABLE for each inservice RPS motor generator set or alternate power supply.~~

~~APPLICABILITY: MODES 1 and 2, MODES 3, 4 and 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both inservice power supplies with one EPA inoperable.	A.1 Remove associated inservice power supply(s) from service.	72 hours
B. One or both inservice power supplies with both EPAs inoperable.	B.1 Remove associated inservice power supply(s) from service.	4 hour
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1 or 2.	C.1 Be in MODE 3.	12 hours

~~(continued)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Condition A or B not met in MODE 3, 4 or 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.</p>	<p>D.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.8.2.1</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for ≥ 24 hours.</p> <hr/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.8.2.2</p> <p>Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <ul style="list-style-type: none"> a. Overvoltage ≤ 132 V. b. Undervoltage ≥ 108 V. c. Underfrequency ≥ 57 Hz. 	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.8.2.3</p> <p>Perform a system functional test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

~~LCO 3.4.1 Two recirculation loops with matched pump speeds shall be in operation with core flow as a function of THERMAL POWER outside the Exclusion Region specified in the COLR.~~

OR

~~One recirculation loop may be in operation with core flow as a function of THERMAL POWER outside the Exclusion Region specified in the COLR and with the following limits applied when the associated LCO is applicable:~~

- ~~a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specified in the COLR;~~
- ~~b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; and~~
- ~~c. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitors Flow Biased High Scram), Allowable Value of Table 3.3.1.1 1 is reset for single loop operation.~~

APPLICABILITY: ~~MODES 1 and 2.~~

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
A.	No recirculation loops in operation.	A.1 Place the reactor mode switch in the Shutdown position.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or two recirculation loops in operation in the Exclusion Region of the power/flow map described in the Core Operating Limits Report.</p>	<p>B.1 Initiate action to exit the Exclusion Region.</p>	<p>Immediately</p>
<p>C. Recirculation pump speed mismatch not within limits.</p>	<p>C.1 Trip one recirculation pump.</p>	<p>2 hours</p>
<p>D. Requirements of the LCO not met for reasons other than Conditions A, B or C.</p>	<p>D.1 Satisfy requirements of the LCO.</p>	<p>24 hours</p>
<p>E. Required Action and associated Completion Time of Condition C or D not met.</p>	<p>E.1 Be in MODE 3.</p>	<p>12 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.1.1</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 24 hours after both recirculation loops are in operation.</p> <hr/> <p>Verify recirculation pump speed mismatch with both recirculation pumps at steady state operation is as follows:</p> <ul style="list-style-type: none"> a. The speed of the faster pump shall be \leq 135% of the speed of the slower pump when operating at < 60.4 % RTP. b. The speed of the faster pump shall be \leq 122% of the speed of the slower pump when operating at ≥ 60.4 % RTP. 	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.1.2</p> <p>Verify core flow as a function of core THERMAL POWER is outside the Exclusion Region shown in the COLR.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.2 Jet Pumps~~

~~LCO 3.4.2 All jet pumps shall be OPERABLE.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

	CONDITION	REQUIRED ACTION	COMPLETION TIME
A.	One or more jet pumps inoperable.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.2.1</p> <hr/> <p style="text-align: center;">NOTES</p> <ol style="list-style-type: none"> 1. Not required to be performed until 4 hours after the associated recirculation loop is in operation. 2. Not required to be performed until 24 hours after > 21.7% RTP. 3. Criterion c is only applicable when pump speed is ≤ 60% rated speed. <hr/> <p>Verify at least one of the following criteria (a, b or c, as applicable) is satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> a. Recirculation pump flow to speed ratio differs by ≤ 5% from established patterns, and jet pump loop flow to recirculation pump speed ratio differs by ≤ 5% from established patterns. b. Each jet pump diffuser to lower plenum differential pressure differs by ≤ 20% from established patterns. c. The recirculation pump flow to speed ratio, jet pump loop flow to recirculation pump speed ratio, and jet pump diffuser to lower plenum differential pressure ratios are evaluated as being acceptable. 	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.3 Safety Relief Valves (SRVs) and Safety Valves (SVs)~~

~~LCO 3.4.3 The safety function of 8 SRVs and SVs shall be OPERABLE.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SRV or SV inoperable.	A.1 Restore the valve to OPERABLE status.	30 days
B. Two SRVs or SVs inoperable.	B.1 Restore one valve to OPERABLE status.	7 days
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours
	AND	
OR	C.2 Be in MODE 4.	36 hours
Three or more SRVs or SVs inoperable.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY														
SR 3.4.3.1	<p>Verify the safety function lift setpoints of the SRVs and SVs are as follows:</p> <table border="0"> <thead> <tr> <th style="text-align: center;"><u>Number of SRVs</u></th> <th style="text-align: center;"><u>Setpoint (psig)</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1110 ± 33.0</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1120 ± 33.0</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1130 ± 33.0</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1140 ± 33.0</td> </tr> </tbody> </table> <table border="0"> <thead> <tr> <th style="text-align: center;"><u>Number of SVs</u></th> <th style="text-align: center;"><u>Setpoint (psig)</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1240 ± 36.0</td> </tr> </tbody> </table> <p>Following testing, lift settings shall be within ± 1%.</p>	<u>Number of SRVs</u>	<u>Setpoint (psig)</u>	1	1110 ± 33.0	1	1120 ± 33.0	2	1130 ± 33.0	2	1140 ± 33.0	<u>Number of SVs</u>	<u>Setpoint (psig)</u>	2	1240 ± 36.0	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<u>Number of SRVs</u>	<u>Setpoint (psig)</u>															
1	1110 ± 33.0															
1	1120 ± 33.0															
2	1130 ± 33.0															
2	1140 ± 33.0															
<u>Number of SVs</u>	<u>Setpoint (psig)</u>															
2	1240 ± 36.0															
SR 3.4.3.2	<p>Verify each SRV actuator strokes when manually actuated.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>														

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.4 RCS Operational LEAKAGE~~

~~LCO 3.4.4 RCS operational LEAKAGE shall be limited to:~~

- ~~a. ≤ 5 gpm unidentified LEAKAGE;~~
- ~~b. ≤ 25 gpm total LEAKAGE averaged over the previous 24 hour period; and~~
- ~~c. ≤ 2 gpm increase in unidentified LEAKAGE within the previous 24 hour period in MODE 1.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Unidentified LEAKAGE not within limit. OR Total LEAKAGE not within limit.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Unidentified LEAKAGE increase not within limit.	B.1 Reduce unidentified LEAKAGE increase to within limits. OR	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.	4 hours
G. Required Action and associated Completion Time of Condition A or B not met.	G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR-3.4.4.1 Verify RCS unidentified and total LEAKAGE and unidentified LEAKAGE increase are within limits.	In accordance with the Surveillance Frequency Control Program

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.5 RCS Leakage Detection Instrumentation~~

~~LCO 3.4.5 The following RCS leakage detection instrumentation shall be OPERABLE:~~

- ~~a. One channel of the Drywell Sump System; and~~
- ~~b. One channel of the Primary Containment Air Sampling System.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required Drywell Sump System inoperable.	A.1 Restore required Drywell Sump System to OPERABLE status.	24 hours
B. Required Primary Containment Air Sampling System inoperable.	B.1 Initiate action to restore required Primary Containment Air Sampling System to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. Required Drywell Sump System inoperable.</p> <p><u>AND</u></p> <p>Required Primary Containment Air Sampling System inoperable.</p>	<p>G.1 Restore required Drywell Sump System to OPERABLE status.</p> <p><u>OR</u></p> <p>G.2 Restore required Primary Containment Air Sampling System to OPERABLE status.</p>	<p>4 hours</p> <p>4 hours</p>
<p>D. Required Action and associated Completion Time of Condition A or C not met.</p>	<p>D.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>



SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Perform a CHANNEL CHECK of required Primary Containment Air Sampling System.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Perform a CHANNEL FUNCTIONAL TEST of required Primary Containment Air Sampling System instrumentation, equipment drain sump flow integrator, and floor drain sump flow integrator.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.3	Perform a CHANNEL FUNCTIONAL TEST of required equipment drain sump flow timer and floor drain sump flow timer.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.4	Perform a CHANNEL CALIBRATION of required Primary Containment Air Sampling System instrumentation, equipment drain sump flow integrator, and floor drain sump flow integrator.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.5	Perform a CHANNEL CALIBRATION of required equipment drain sump flow timer and floor drain sump flow timer.	In accordance with the Surveillance Frequency Control Program

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.6 RCS Specific Activity~~

~~LCO 3.4.6 The specific activity of the reactor coolant shall be limited to DOSE EQUIVALENT I-131 specific activity $\leq 0.2 \mu\text{Ci/gm}$.~~

~~APPLICABILITY: MODE 1,
MODES 2 and 3 with any main steam line not isolated.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Reactor coolant specific activity $> 0.2 \mu\text{Ci/gm}$ and $\leq 2.0 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.</p>	<p style="text-align: center;">NOTE</p> <p>LCO 3.0.4.c is applicable.</p> <hr/> <p>A.1 Determine DOSE EQUIVALENT I-131.</p> <p>AND</p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limits.</p>	<p>Once per 4 hours</p> <p>48 hours</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p>OR</p> <p>Reactor Coolant specific activity $> 2.0 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.</p>	<p>B.1 Determine DOSE EQUIVALENT I-131.</p> <p>AND</p> <p>B.2.1 Isolate all main steam lines.</p> <p>OR</p>	<p>Once per 4 hours</p> <p>12 hours</p> <p style="text-align: right;">(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.2.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.6.1</p> <p style="text-align: center;"><u>NOTE</u></p> <p style="text-align: center;"><u>Only required to be performed in MODE 1.</u></p> <p>Verify reactor coolant DOSE-EQUIVALENT I-131 specific activity is $\leq 0.2 \mu\text{Ci/gm.}$</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.7 Residual Heat Removal (RHR) Shutdown Cooling System — Hot Shutdown~~

~~LCO 3.4.7 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.~~

NOTES

- ~~1. Both required RHR shutdown cooling subsystems and recirculation pumps may not be in operation for up to 2 hours per 8 hour period.~~
- ~~2. One required RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.~~

~~APPLICABILITY: MODE 3, with reactor steam dome pressure < the RCIC Steam Supply Line Pressure — Low isolation pressure.~~

~~ACTIONS~~

NOTE

~~Separate Condition entry is allowed for each RHR shutdown cooling subsystem.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required RHR shutdown cooling subsystems inoperable.	A.1 Initiate action to restore required RHR shutdown cooling subsystem(s) to OPERABLE status. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Verify by administrative means an alternate method of decay heat removal is available for each required inoperable RHR shutdown cooling subsystem.	1 hour
	<u>AND</u> A.3 Be in MODE 4.	24 hours
B. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	B.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.	Immediately
	<u>AND</u> B.2 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter
	<u>AND</u> B.3 Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.7.1</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be met until 2 hours after reactor steam dome pressure is < the RCIC Steam Supply Line Pressure — Low isolation pressure.</p> <hr/> <p>Verify one required RHR shutdown cooling subsystem or recirculation pump is operating.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.7.2</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be performed until 12 hours after reactor steam dome pressure is < the RCIC Steam Supply Line Pressure — Low isolation pressure.</p> <hr/> <p>Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.8 Residual Heat Removal (RHR) Shutdown Cooling System — Cold Shutdown~~

~~LCO 3.4.8 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.~~

~~NOTES~~

- ~~1. Both required RHR shutdown cooling subsystems and recirculation pumps may not be in operation for up to 2 hours per 8 hour period.~~
- ~~2. One required RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.~~

APPLICABILITY: MODE 4.

ACTIONS

~~NOTE~~

~~Separate Condition entry is allowed for each shutdown cooling subsystem.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required RHR shutdown cooling subsystems inoperable.	A.1 Verify by administrative means an alternate method of decay heat removal is available for each inoperable required RHR shutdown cooling subsystem.	1 hour AND Once per 24 hours thereafter

~~(continued)~~

ACTIONS (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
B.	No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	B.1 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter
		<u>AND</u> B.2 Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one required RHR shutdown cooling subsystem or one recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.9 ~~RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within the limits specified in the PTLR.~~

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. NOTE Required Action A.2 shall be completed if this Condition is entered.</p> <hr/> <p>Requirements of the LCO not met in MODE 1, 2, or 3.</p>	<p>A.1 Restore parameter(s) to within limits.</p> <p><u>AND</u></p> <p>A.2 Determine RCS is acceptable for continued operation.</p>	<p>30 minutes</p> <p>72 hours</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>B.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><u>C.</u> <u>NOTE</u></p> <p>Required Action C.2 shall be completed if this Condition is entered.</p> <hr/> <p>Requirements of the LCO not met in other than MODES 1, 2, and 3.</p>	<p>C.1 Initiate action to restore parameter(s) to within limits.</p> <p><u>AND</u></p> <p>C.2 Determine RCS is acceptable for operation.</p>	<p>Immediately</p> <p>Prior to entering MODE 2 or 3.</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p><u>SR 3.4.9.1</u> <u>NOTE</u></p> <p>Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing.</p> <hr/> <p>Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within the limits specified in the PTLR.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.2	<p>Verify RCS pressure and RCS temperature are within the criticality limits specified in the PTLR.</p>	<p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p>
SR 3.4.9.3	<p style="text-align: center;"><u>NOTE</u></p> <p>Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup.</p> <hr/> <p>Verify the difference between the bottom head coolant temperature and the Reactor Pressure Vessel (RPV) coolant temperature is within the limits specified in the PTLR.</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>
SR 3.4.9.4	<p style="text-align: center;"><u>NOTE</u></p> <p>Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup.</p> <hr/> <p>Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is within the limits specified in the PTLR.</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.9.5</p> <hr/> <p style="text-align: center;">NOTE</p> <hr/> <p>Only required to be performed when tensioning the reactor vessel head bolting studs.</p> <hr/> <p>Verify temperatures at the reactor vessel head flange and the shell adjacent to the head flange are within the limits specified in the PTLR.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.9.6</p> <hr/> <p style="text-align: center;">NOTE</p> <hr/> <p>Not required to be performed until 30 minutes after RCS temperature $\leq 80^{\circ}\text{F}$ in MODE 4.</p> <hr/> <p>Verify temperatures at the reactor vessel head flange and the shell adjacent to the head flange are within the limits specified in the PTLR.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.9.7</p> <hr/> <p style="text-align: center;">NOTE</p> <hr/> <p>Not required to be performed until 12 hours after RCS temperature $\leq 100^{\circ}\text{F}$ in MODE 4.</p> <hr/> <p>Verify temperatures at the reactor vessel head flange and the shell adjacent to the head flange are within the limits specified in the PTLR.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

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~~3.4 REACTOR COOLANT SYSTEM (RCS)~~

~~3.4.10 Reactor Steam Dome Pressure~~

~~LCO 3.4.10 The reactor steam dome pressure shall be \leq 1025 psig.~~

~~APPLICABILITY: MODES 1 and 2.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1 Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.4.10.1 Verify reactor steam dome pressure is \leq 1025 psig.	In accordance with the Surveillance Frequency Control Program

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3.5 ~~EMERGENCY CORE COOLING SYSTEMS (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM~~

3.5.1 ~~ECCS — Operating~~

~~LCO 3.5.1~~ Each ~~ECCS~~ injection/spray subsystem and the Automatic Depressurization System (ADS) function of four safety/relief valves shall be ~~OPERABLE~~.

~~APPLICABILITY:~~ ~~MODE 1, MODES 2 and 3, except High Pressure Coolant Injection (HPCI) is not required to be OPERABLE with reactor steam dome pressure \leq 150 psig and ADS valves are not required to be OPERABLE with reactor steam dome pressure \leq 100 psig.~~

~~ACTIONS~~

~~NOTE~~

~~LCO 3.0.4.b is not applicable to HPCI.~~

	CONDITION	REQUIRED ACTION	COMPLETION TIME
A.	One Residual Heat Removal (RHR) pump inoperable.	A.1 Restore RHR pump to OPERABLE status.	30 Days
B.	One low pressure ECCS subsystem inoperable for reasons other than Condition A.	B.1 Restore low pressure ECCS subsystem to OPERABLE status.	7 days
C.	One Core Spray subsystem inoperable. AND One or two RHR pump(s) inoperable.	C.1 Restore Core Spray subsystem to OPERABLE status. OR C.2 Restore RHR pump(s) to OPERABLE status.	72 hours 72 hours
D.	Both Core Spray subsystems inoperable.	D.1 Restore one Core Spray subsystem to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1 Be in MODE 3.	12 hours
	<u>AND</u> E.2 Be in MODE 4.	36 hours
F. HPCI System inoperable.	F.1 Verify by administrative means RCIC System is OPERABLE.	Immediately
	<u>AND</u> F.2 Restore HPCI System to OPERABLE status.	14 days
G. HPCI System inoperable. <u>AND</u> One RHR pump inoperable.	G.1 Restore HPCI System to OPERABLE status.	7 days
	<u>OR</u> G.2 Restore RHR pump to OPERABLE status.	7 days
H. HPCI System inoperable. <u>AND</u> One low pressure ECGS subsystem is inoperable for reasons other than Condition A.	H.1 Restore HPCI System to OPERABLE status.	72 hours
	<u>OR</u> H.2 Restore low pressure ECGS subsystem to OPERABLE status.	72 hours
I. HPCI System inoperable. <u>AND</u> One ADS valve inoperable.	I.1 Restore HPCI System to OPERABLE status.	72 hours
	<u>OR</u> I.2 Restore ADS valve to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>J. Required Action and associated Completion Time of Condition F, G, H, or I not met.</p>	<p>J.1 Be in MODE 3. <u>AND</u> J.2 Reduce reactor steam dome pressure to ≤ 150 psig.</p>	<p>12 hours 36 hours</p>
<p>K. One ADS valve inoperable.</p>	<p>K.1 Restore ADS valve to OPERABLE status.</p>	<p>30 days</p>
<p>L. One ADS valve inoperable. <u>AND</u> One low pressure ECCS subsystem inoperable for reasons other than Condition A.</p>	<p>L.1 Restore ADS valve to OPERABLE status. <u>OR</u> L.2 Restore low pressure ECCS subsystem to OPERABLE status.</p>	<p>72 hours 72 hours</p>
<p>M. Two or more ADS valves inoperable. <u>OR</u> Required Action and associated Completion Time of Condition K or L not met.</p>	<p>M.1 Be in MODE 3. <u>AND</u> M.2 Reduce reactor steam dome pressure to ≤ 100 psig.</p>	<p>12 hours 36 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>N. Two or more low pressure ECSS subsystems inoperable for reasons other than Condition C or D.</p> <p><u>OR</u></p> <p>HPCI System and two or more ADS valves inoperable.</p> <p><u>OR</u></p> <p>HPCI System and two or more low pressure ECSS subsystems inoperable.</p> <p><u>OR</u></p> <p>One ADS valve and two or more low pressure ECSS subsystems inoperable.</p> <p><u>OR</u></p> <p>One ADS valve and HPCI System and one low pressure ECSS subsystem inoperable.</p>	<p>N.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.1. Verify, for each ECSS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY									
SR 3.5.1.2	<p style="text-align: center;"><u>NOTE</u></p> <p>The low pressure coolant injection (LPCI) system may be considered OPERABLE during alignment and operation for decay heat removal in MODE 3, if capable of being manually realigned and not otherwise inoperable.</p> <hr/> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met for system vent flow paths opened under administrative control.</p> <hr/> <p>Verify each ECSS injection/spray subsystem power operated and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	In accordance with the Surveillance Frequency Control Program									
SR 3.5.1.3	Verify a 30 day supply of nitrogen exists for each ADS accumulator.	In accordance with the Surveillance Frequency Control Program									
SR 3.5.1.4	Verify the following ECSS pumps develop the specified flow rate against a system head corresponding to the specified reactor pressure.	In accordance with the INSERVICE TESTING PROGRAM									
	<table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>SYSTEM FLOW RATE</u></th> <th style="text-align: center;"><u>NO. OF PUMPS</u></th> <th style="text-align: center;"><u>SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF</u></th> </tr> </thead> <tbody> <tr> <td>Spray</td> <td style="text-align: center;">4</td> <td style="text-align: center;">≥ 113 psig</td> </tr> <tr> <td>LPCI</td> <td style="text-align: center;">4</td> <td style="text-align: center;">≥ 20 psig</td> </tr> </tbody> </table>	<u>SYSTEM FLOW RATE</u>	<u>NO. OF PUMPS</u>	<u>SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF</u>	Spray	4	≥ 113 psig	LPCI	4	≥ 20 psig	
<u>SYSTEM FLOW RATE</u>	<u>NO. OF PUMPS</u>	<u>SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF</u>									
Spray	4	≥ 113 psig									
LPCI	4	≥ 20 psig									

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.5</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</p> <hr/> <p>Verify, with reactor pressure ≤ 1025 and ≥ 940 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.5.1.6</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</p> <hr/> <p>Verify, with reactor pressure ≤ 160 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.7</p> <p style="text-align: center;"><u>NOTES</u></p> <ol style="list-style-type: none"> 1. Vessel injection /spray may be excluded. 2. For the LPCI System, the Surveillance may be met by any series of sequential and/or overlapping steps, such that the LPCI Loop Select function is tested. <hr/> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.8	<p style="text-align: center;">NOTE</p> <p>Valve actuation may be excluded.</p> <hr/> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.9	Verify each ADS valve actuator strokes when manually actuated.	In accordance with the INSERVICE TESTING PROGRAM

~~3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM~~

~~3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control~~

~~LCO 3.5.2 DRAIN TIME of RPV water inventory to the TS 2.1.1.3 Safety Limit shall be \geq 36 hours.~~

AND

~~One low pressure ECCS subsystem shall be OPERABLE.~~

APPLICABILITY: MODES 4 and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required ECCS subsystem inoperable.	A.1 Restore required ECCS subsystem to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to establish a method of water injection capable of operating without offsite electrical power.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. DRAIN TIME < 36 hours and \geq 8 hours.</p>	<p>C.1 Verify secondary containment boundary is capable of being established in less than the DRAIN TIME.</p>	<p>4 hours</p>
	<p><u>AND</u></p>	
	<p>C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.</p>	<p>4 hours</p>
	<p><u>AND</u></p>	
	<p>C.3 Verify one standby gas treatment subsystem is capable of being placed in operation in less than the DRAIN TIME.</p>	<p>4 hours</p>

(continued)

ACTIONS (Continued)

<p>D. DRAIN TIME < 8 hours.</p>	<p>D.1 <u>NOTE</u> Required ECCS injection/spray subsystem or additional method of water injection shall be capable of operating without offsite electrical power.</p> <p>Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level > TS 2.1.1.3 Safety Limit for >= 36 hours.</p> <p><u>AND</u></p> <p>D.2 Initiate action to establish secondary containment boundary.</p> <p><u>AND</u></p> <p>D.3 Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room.</p> <p><u>AND</u></p> <p>D.4 Initiate action to verify one standby gas treatment subsystem is capable of being placed in operation.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
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(continued)

ACTIONS (Continued)

<p>E. Required Action and associated Completion Time of Condition C or D not met.</p> <p><u>OR</u></p> <p>DRAIN TIME < 1 hour.</p>	<p>E.1 Initiate action to restore DRAIN TIME to ≥ 36 hours.</p>	<p>Immediately</p>
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SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.1</p>	<p>Verify DRAIN TIME ≥ 36 hours.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.2</p>	<p>Verify, for a required Low Pressure Coolant Injection (LPCI) subsystem, the suppression pool water level is ≥ 7.0 ft.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	<p>Verify, for a required Core Spray (CS) subsystem, the:</p> <p>a. Suppression pool water level is ≥ 8.0 ft; or</p> <p>b. Condensate storage tank water level in one CST is ≥ 11 ft or ≥ 7 ft in both CSTs.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.5.2.4	<p>Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.5.2.5	<p style="text-align: center;"><u>NOTE</u></p> <p>A LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.</p> <hr/> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met for system vent flow paths opened under administrative control.</p> <hr/> <p>Verify, for the required ECCS subsystem, each power operated and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Operate the required ECCS subsystem through the recirculation line for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.8	<p style="text-align: center;"><u>NOTE</u></p> <p>Vessel injection/spray may be excluded.</p> <p>Verify the required ECCS injection/spray subsystem can be manually operated.</p>	In accordance with the Surveillance Frequency Control Program

~~3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM~~

~~3.5.3 RCIC System~~

~~LCO 3.5.3 The RCIC System shall be OPERABLE.~~

~~APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.~~

~~ACTIONS~~

~~NOTE~~

~~LCO 3.0.4.b is not applicable to RCIC.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCIC System inoperable.	A.1 Verify by administrative means High Pressure Coolant Injection System is OPERABLE.	Immediately
	<u>AND</u> A.2 Restore RCIC System to OPERABLE status.	14 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Reduce reactor steam dome pressure to ≤ 150 psig.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.1 Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.2 NOTE</p> <p>Not required to be met for system vent flow paths opened under administrative control.</p> <hr/> <p>Verify each RCIC System power operated and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.3 NOTE</p> <p>Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</p> <hr/> <p>Verify, with reactor pressure \leq 4025 psig and \geq 940 psig, the RCIC pump can develop a flow rate \geq 400 gpm against a system head corresponding to reactor pressure.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.5.3.4 NOTE</p> <p>Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test.</p> <hr/> <p>Verify, with reactor pressure \leq 460 psig, the RCIC pump can develop a flow rate \geq 400 gpm against a system head corresponding to reactor pressure.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5</p> <hr/> <p style="text-align: center;">NOTE</p> <hr/> <p>Vessel injection may be excluded.</p> <hr/> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

DELETED

3.6 ~~CONTAINMENT SYSTEMS~~

3.6.1.1 ~~Primary Containment~~

LCO 3.6.1.1 ~~Primary containment shall be OPERABLE.~~

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment inoperable.	A.1 Restore primary containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Program.	In accordance with the Primary Containment Leakage Rate Program.
SR 3.6.1.1.2	Verify suppression chamber pressure does not increase at a rate > 0.009 psi per minute tested over a 10 minute period at a differential pressure of > 1.0 psid.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.2 Primary Containment Air Lock~~

~~LCO 3.6.1.2 The primary containment air lock shall be OPERABLE.~~

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

~~ACTIONS~~

~~NOTES~~

- ~~1. Entry and exit is permissible to perform repairs of the air lock components.~~
- ~~2. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding overall containment leakage rate acceptance criteria.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One primary containment air lock door inoperable.</p>	<p style="text-align: center;">NOTES</p> <ol style="list-style-type: none"> 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls. 	<p>1 hour</p> <p style="text-align: right;">(continued)</p>
	<p>A.1 Verify the OPERABLE door is closed.</p> <p><u>AND</u></p>	

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.2 Lock the OPERABLE door closed.</p> <p><u>AND</u></p> <p>A.3 NOTE Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means.</p> <hr/> <p>Verify the OPERABLE door is locked closed.</p>	<p>24 hours</p> <p>Once per 31 days</p>
<p>B. Primary containment air lock interlock mechanism inoperable.</p>	<p>NOTES</p> <p>1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the air lock are inoperable and Condition C is entered.</p> <p>2. Entry into and exit from containment is permissible under the control of a dedicated individual.</p> <hr/> <p>B.1 Verify an OPERABLE door is closed.</p> <p><u>AND</u></p>	<p>1 hour</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Lock an OPERABLE door closed.	24 hours
	<p><u>AND</u></p> <p>B.3 NOTE Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means.</p> <hr/> <p>Verify an OPERABLE door is locked closed.</p>	Once per 31 days
C. Primary containment air lock inoperable for reasons other than Condition A or B.	C.1 Initiate action to evaluate primary containment overall leakage rate per LCO 3.6.1.1, using current air lock test results.	Immediately
	<p><u>AND</u></p> <p>C.2 Verify a door is closed.</p>	1 hour
	<p><u>AND</u></p> <p>C.3 Restore air lock to OPERABLE status.</p>	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	12 hours
	AND D.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.1	<p style="text-align: center;"><u>NOTES</u></p> <p>1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.</p> <p>2. Results shall be evaluated against acceptance criteria Applicable to SR 3.6.1.1.1.</p> <hr/> <p>Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.</p> <p>The acceptance criterion for air lock testing is overall air lock leakage rate $\leq 0.05 L_a$ when tested at $\geq P_a$.</p>	<p>In accordance with the Primary Containment Leakage Rate Testing Program.</p>
SR 3.6.1.2.2	<p>Verify only one door in the primary containment air lock can be opened at a time.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.3 Primary Containment Isolation Valves (PCIVs)~~

~~LCO 3.6.1.3 Each PCIV, except reactor building to suppression chamber vacuum breakers, shall be OPERABLE.~~

~~APPLICABILITY: MODES 1, 2, and 3~~

~~ACTIONS~~

~~NOTES~~

- ~~1. Penetration flow paths may be unisolated intermittently under administrative controls.~~
- ~~2. Separate Condition entry is allowed for each penetration flow path.~~
- ~~3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.~~
- ~~4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. NOTE Only applicable to penetration flow paths with two PCIVs.</p> <hr/> <p>One or more penetration flow paths with one PCIV inoperable except for MSIV or purge valve leakage not within limits.</p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.</p> <p><u>AND</u></p>	<p>4 hours except for main steam line</p> <p><u>AND</u></p> <p>8 hours for main steam line</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.2</p> <p style="text-align: center;"><u>NOTES</u></p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <hr/> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation devices outside primary containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 2 or 3 from MODE 4, if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. NOTE Only applicable to penetration flow paths with two PCIVs.</p> <hr/> <p>One or more penetration flow paths with two PCIVs inoperable except for MSIV or purge valve leakage not within limits.</p>	<p>B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.</p>	<p>1 hour</p>
<p>C. NOTE Only applicable to penetration flow paths with only one PCIV.</p> <hr/> <p>One or more penetration flow paths with one PCIV inoperable.</p>	<p>C.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.</p> <p><u>AND</u></p> <p>C.2 <u>NOTES</u></p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p>	<p>72 hours</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. (continued)	G.2 Verify the affected penetration flow path is isolated.	Once per 31 days +
D. One or more penetration flow paths with one or more MSIVs not within leakage limits.	D.1 Restore leakage to within limits.	8 hours
E. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	E.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	24 hours
	<p><u>AND</u></p> <p>E.2 <u>NOTE</u> Only required to be performed if a purge valve with resilient seal is used to satisfy Required Action E.1.</p>	72 hours
	<p><u>AND</u></p> <p>E.3 <u>NOTES</u> 1. Isolation devices in high radiation areas may be verified by use of administrative means.</p>	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. (continued)</p>	<p>E.3 NOTES 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <hr/> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation device outside containment</p>
<p>F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.</p>	<p>F.1 Be in MODE 3. AND F.2 Be in MODE 4.</p>	<p>12 hours 36 hours</p>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.1</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met when the 18 inch primary containment purge valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open.</p> <p>Verify each 18 inch primary containment purge valve is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>	
<p>SR 3.6.1.3.2</p> <p>Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>	
<p>SR 3.6.1.3.3</p> <p>Verify the isolation time of each power operated automatic PCIV, except for MSIVs, is within limits.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>	
<p>SR 3.6.1.3.4</p> <p>Perform leakage rate testing for each primary containment purge valve with resilient seals.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Once within 02 days after opening the valve</p>	

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	Verify the isolation time of each MSIV is > 3 seconds and < 5 seconds.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.3.6	<p style="text-align: center;"><u>NOTE</u></p> <p>For the MSIVs, this SR may be met by any series of sequential, overlapping, or total system steps, such that proper operation is verified.</p> <hr/> <p>Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.7	Verify a representative sample of reactor instrumentation line EFCVs actuate on a simulated instrument line break to restrict flow.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.8	Remove and test the explosive squib from each shear isolation valve of the TIP System.	In accordance with the INSERVICE TESTING PROGRAM

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.9	Verify leakage rate through each MSIV is ≤ 100 scfh and that the combined maximum pathway leakage rate for all four main steam lines is ≤ 200 scfh when tested at ≥ 24 psig.	In accordance with the Primary Containment Leakage Rate Testing Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.4 Drywell Air Temperature~~

~~LCO 3.6.1.4 Drywell average air temperature shall be \leq 135°F.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell average air temperature not within limit.	A.1 Restore drywell average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.6.1.4.1 Verify drywell average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.5 Low Low Set (LLS) Valves~~

~~LCO 3.6.1.5 The LLS function of two safety/relief valves shall be OPERABLE.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LLS valve inoperable.	A.1 Restore LLS valve to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met. OR Two LLS valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.5.1	Verify each LLS valve actuator strokes when manually actuated.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.5.2	<p style="text-align: center;">NOTE</p> <p>Valve actuation may be excluded.</p> <hr/> <p>Verify the LLS System actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program

~~Reactor Building to Suppression Chamber Vacuum Breakers~~
3.6.1.6

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.6 Reactor Building to Suppression Chamber Vacuum Breakers~~

~~LCO 3.6.1.6 Each reactor building to suppression chamber vacuum breaker assembly shall be OPERABLE.~~

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

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each reactor building to suppression chamber vacuum breaker assembly.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two reactor building to suppression chamber vacuum breaker assemblies with one valve not closed.	A.1 Close the open vacuum breaker assembly valve.	72 hours
B. One or two reactor building to suppression chamber vacuum breaker assemblies with both valves not closed.	B.1 Close one open vacuum breaker assembly valve.	1 hour
C. One reactor building to suppression chamber vacuum breaker assembly with one or two valves inoperable for opening.	C.1 Restore the vacuum breaker assembly to OPERABLE status.	72 hours

~~(continued)~~

Reactor Building to Suppression Chamber Vacuum Breakers
3.6.1.6

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two reactor building to suppression chamber vacuum breaker assemblies with one or two valves inoperable for opening.	D.1 Restore both valves in one vacuum breaker assembly to OPERABLE status.	1 hour
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3.	12 hours
	<u>AND</u> E.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.6.1</p> <p style="text-align: center;"><u>NOTES</u></p> <p>1. Not required to be met for vacuum breaker assembly valves that are open during Surveillances.</p> <p>2. Not required to be met for vacuum breaker assembly valves open when performing their intended function.</p> <hr/> <p>Verify each vacuum breaker assembly valve is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.6.2</p> <p>Perform a functional test of each vacuum breaker assembly valve.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.3	Verify the opening setpoint of each vacuum breaker assembly valve is ≤ 0.614 psid.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.1.7 Suppression Chamber to Drywell Vacuum Breakers~~

~~LCO 3.6.1.7 Six suppression chamber to drywell vacuum breakers shall be OPERABLE for opening.~~

AND

~~Seven suppression chamber to drywell vacuum breakers shall be closed, except when performing their intended function.~~

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required suppression chamber to drywell vacuum breaker inoperable for opening.	A.1 Restore one vacuum breaker to OPERABLE status.	72 hours
B. One suppression chamber to drywell vacuum breaker not closed.	B.1 Close the open vacuum breaker.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	42 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.7.1</p> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met for vacuum breakers that are open during Surveillances.</p> <hr/> <p>Verify each vacuum breaker is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.2</p> <p>Perform a functional test of each required vacuum breaker.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.1.7.3</p> <p>Verify the opening setting of each required vacuum breaker is ≤ 0.5 psid.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.2.1 Suppression Pool Average Temperature~~

~~LCO 3.6.2.1 Suppression pool average temperature shall be:~~

- ~~a. ≤ 95°F when any OPERABLE intermediate range monitor (IRM) is > 25/40 divisions of full scale on Range 7 and no testing that adds heat to the suppression pool is being performed;~~
- ~~b. ≤ 105°F when any OPERABLE IRM channel is > 25/40 divisions of full scale on Range 7 and testing that adds heat to the suppression pool is being performed; and~~
- ~~c. ≤ 110°F when all OPERABLE IRM channels are ≤ 25/40 divisions of full scale on Range 7.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool average temperature > 95°F but ≤ 110°F. <u>AND</u> Any OPERABLE IRM channel > 25/40 divisions of full scale on Range 7. <u>AND</u> Not performing testing that adds heat to the suppression pool.	A.1 Verify suppression pool average temperature ≤ 110°F. <u>AND</u> A.2 Restore suppression pool average temperature to ≤ 95°F.	Once per hour 24 hours

~~(continued)~~

Suppression Pool Average Temperature
3.6.2.4

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Reduce THERMAL POWER until all OPERABLE IRM channels \leq 25/40 divisions of full scale on Range 7.</p>	<p>12 hours</p>
<p>G. Suppression pool average temperature $> 105^{\circ}\text{F}$.</p> <p><u>AND</u></p> <p>Any OPERABLE IRM channel $> 25/40$ divisions of full scale on Range 7.</p> <p><u>AND</u></p> <p>Performing testing that adds heat to the suppression pool.</p>	<p>C.1 Suspend all testing that adds heat to the suppression pool.</p>	<p>Immediately</p>
<p>D. Suppression pool average temperature $> 110^{\circ}\text{F}$ but $\leq 120^{\circ}\text{F}$.</p>	<p>D.1 Place the reactor mode switch in the Shutdown position.</p> <p><u>AND</u></p> <p>D.2 Verify suppression pool average temperature $\leq 120^{\circ}\text{F}$.</p> <p><u>AND</u></p> <p>D.3 Be in MODE 4.</p>	<p>Immediately</p> <p>Once per 30 minutes</p> <p>36 hours</p>

(continued)

Suppression Pool Average Temperature
3.6.2.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Suppression pool average temperature > 120°F.	E.1 Depressurize the reactor vessel to < 200 psig.	12 hours
	<u>AND</u> E.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.1.1 Verify suppression pool average temperature is within the applicable limits.	In accordance with the Surveillance Frequency Control Program <u>AND</u> 5 minutes when performing testing that adds heat to the suppression pool

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.2.2 Suppression Pool Water Level~~

~~LCO 3.6.2.2 Suppression pool water level shall be \geq 10.11 ft and \leq 10.43 ft.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool water level not within limits.	A.1 Restore suppression pool water level to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.6.2.2.1 Verify suppression pool water level is within limits.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling~~

~~LCO 3.6.2.3 Two RHR suppression pool cooling subsystems shall be OPERABLE.~~

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

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One RHR pump inoperable.	A.1 Restore RHR pump to OPERABLE status.	30 days
B.	One RHR pump in each suppression pool cooling subsystem inoperable.	B.1 Restore one RHR pump to OPERABLE status.	7 days
C.	One RHR suppression pool cooling subsystem inoperable for reasons other than Condition A.	C.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days
D.	Two RHR suppression pool cooling subsystems inoperable for reasons other than Condition B.	D.1 Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
E.	Required Action and associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify by administrative means each RHR suppression pool cooling subsystem manual, power operated and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.2	Verify each RHR pump develops a flow rate \geq 4800 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.2.4 Residual Heat Removal (RHR) Suppression Pool Spray~~

~~LCO 3.6.2.4 Two RHR suppression pool spray subsystems shall be OPERABLE.~~

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

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool spray subsystem inoperable.	A.1 Restore RHR suppression pool spray subsystem to OPERABLE status.	30 days
B. Two RHR suppression pool spray subsystems inoperable.	B.1 Restore one RHR suppression pool spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.4.1	Verify by an air test that the suppression pool spray header and nozzles are unobstructed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2	Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.3.1 Containment Atmosphere Dilution (CAD) System~~

~~The requirement for the CAD System is deleted per Amendment~~



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~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.3.2 Primary Containment Oxygen Concentration~~

~~LCO 3.6.3.2 The primary containment oxygen concentration shall be < 4.0 volume percent.~~

~~APPLICABILITY: MODE 1 during the time period:~~

- ~~a. From 24 hours after THERMAL POWER is > 15% RTP following startup, to~~
- ~~b. 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to reactor shutdown.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment oxygen concentration not within limit.	A.1 Restore oxygen concentration to within limit.	24 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 15% RTP.	8 hours

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.6.3.2.1 Verify primary containment oxygen concentration is within limits.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.4.1 Secondary Containment~~

~~ECO 3.6.4.1 The secondary containment shall be OPERABLE.~~

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Secondary containment inoperable.	A.1 Restore secondary containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify all secondary containment equipment hatches are closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2	<p style="text-align: center;"><u>NOTE</u></p> <p>Doors in high radiation areas may be verified by administrative means.</p> <hr/> <p>Verify that either the outer door(s) or the inner door(s) in each secondary containment access opening are closed, except when the access opening is being used for entry and exit.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3	Verify each SBGT subsystem can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment at a flow rate ≤ 4000 cfm.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.4.2 Secondary Containment Isolation Valves/Dampers (SCIV/Ds)~~

~~LCO 3.6.4.2 Each SCIV/D shall be OPERABLE.~~

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

~~ACTIONS~~

~~NOTES~~

- ~~1. Penetration flow paths may be unisolated intermittently under administrative controls.~~
- ~~2. Separate Condition entry is allowed for each penetration flow path.~~
- ~~3. Enter applicable Conditions and Required Actions for systems made inoperable by SCIV/Ds.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one SCIV/D inoperable.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve/damper, closed manual valve, or blind flange. AND	8 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.2 NOTES</p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <hr/> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days</p>
<p>B. NOTE</p> <p>Only applicable to penetration flow paths with two isolation valves/dampers.</p> <hr/> <p>One or more penetration flow paths with two SCIV/Ds inoperable.</p>	<p>B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve/damper, closed manual valve, or blind flange.</p>	<p>4 hours</p>

(continued)

ACTIONS (continued)

C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	C.2 Be in MODE 4.	36 hours

+

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	Verify the isolation time of each power operated automatic SCIV/D is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.2.2	Verify each automatic SCIV/D actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

~~3.6 CONTAINMENT SYSTEMS~~

~~3.6.4.3 Standby Gas Treatment (SBGT) System~~

~~LCO 3.6.4.3 Two SBGT subsystems shall be OPERABLE.~~

APPLICABILITY: MODES 1, 2, and 3. +

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBGT subsystem inoperable.	A.1 Restore SBGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours +

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two SBGT subsystems inoperable.	G.1 Enter LCO 3.0.3.	Immediately



SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SBGT subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	<p style="text-align: center;"><u>NOTE</u></p> <p>When a SBGT subsystem is placed in an inoperable status solely for the performance of VFTP testing required by this Surveillance on the other subsystem, entry into associated Conditions and Required Actions may be delayed for up to 1 hour.</p> <hr/> <p>Perform required SBGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP):</p>	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SBGT subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.4	Verify each SBGT filter cooler bypass damper can be opened and the fan started.	In accordance with the Surveillance Frequency Control Program

Deleted

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days
C. One RHRSW subsystem inoperable for reasons other than Condition A.	<p>C.1 <u>NOTE</u> Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System.</p> <hr/> <p>Restore RHRSW subsystem to OPERABLE status.</p>	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Both RHRSW subsystems inoperable for reasons other than Condition B.</p>	<p style="text-align: center;"><u>NOTE</u></p> <p>Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by RHRSW System.</p> <hr/> <p>D.1 Restore one RHRSW subsystem to OPERABLE status.</p>	<p>8 hours</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.1.1 Verify each RHRSW subsystem power operated and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

Deleted

3.7 PLANT SYSTEMS

3.7.2 River Water Supply (RWS) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two RWS subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One RWS subsystem inoperable.	A.1 Restore the RWS subsystem to OPERABLE status.	7 days
B.	Required Action and associated Completion Time of Condition A not met.	<p style="text-align: center;">NOTE</p> Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System Hot Shutdown," for RHR shutdown cooling made inoperable by RWS System.	
	OR		
	Both RWS subsystems inoperable.		
	OR	B.1 Be in MODE 3.	12 hours
	UHS inoperable.	AND	
		B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the river water level is \geq 725.2 ft mean sea level.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	Verify the average river water temperature is \leq 95°F.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.3	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until river depth $<$ 2 feet at the intake structure.</p> <hr/> <p>Verify the river water depth is \geq 12 inches.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.4	Verify each RWS subsystem power operated and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.5	Verify the river water depth \geq 12 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.6	Verify each RWS subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

Deleted

3.7 PLANT SYSTEMS

3.7.3 ~~Emergency Service Water (ESW) System~~

LCO 3.7.3 ~~Two ESW subsystems shall be OPERABLE.~~

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One ESW subsystem inoperable.</p>	<p style="text-align: center;"><u>NOTES</u></p> <p>1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AG Sources Operating," for diesel generator made inoperable by ESW System.</p> <p>2. Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System Hot Shutdown," for RHR shutdown cooling made inoperable by ESW System.</p> <hr/> <p>A.1 Restore the ESW subsystem to OPERABLE status.</p>	<p style="text-align: center;">7 days</p>
<p>B. Required Action and Associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>Both ESW subsystems inoperable.</p>	<p>B.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>B.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.3.1</p> <p style="text-align: center;">NOTE</p> <p>Isolation of flow to individual components does not render ESW System inoperable.</p> <p>Verify each ESW subsystem power operated and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.3.2</p> <p>Verify each ESW subsystem actuates on an actual or simulated initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

3.7 PLANT SYSTEMS Deleted

3.7.4 Standby Filter Unit (SFU) System

LCO 3.7.4 Two SFU subsystems shall be OPERABLE.

NOTE

The control building envelope (CBE) boundary may be opened intermittently under administrative control.

APPLICABILITY: ~~MODES 1, 2, and 3,~~
~~During movement of irradiated fuel assemblies in the secondary containment,~~
~~During CORE ALTERATIONS.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFU subsystem inoperable for reasons other than Condition B.	A.1 Restore SFU subsystem to OPERABLE status.	7 days
B. One or more SFU subsystems inoperable due to inoperable CBE boundary in MODES 1, 2, and 3.	B.1 Initiate actions to implement mitigating actions.	Immediately
	AND	
	B.2 Verify mitigating actions ensure CBE occupant exposures to radiological hazards will not exceed limits and verify by administrative means that CBE occupants are protected from smoke and chemical hazards.	24 hours
	AND	
	B.3 Restore CBE boundary to OPERABLE status.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.</p>	<p>C.1 Be in MODE 3.</p> <p>AND</p> <p>C.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
<p>D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment during CORE ALTERATIONS.</p>	<p>NOTE</p> <p>LCO 3.0.3 is not applicable.</p> <p>D.1 Place OPERABLE SFU subsystem in the isolation mode.</p> <p>OR</p> <p>D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p>AND</p> <p>D.2.2 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>E. Both SFU subsystems inoperable in MODE 1, 2 or 3 for reasons other than Condition B.</p>	<p>E.1 Enter LCO 3.0.3</p>	<p>Immediately</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Both SFU subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment during CORE ALTERATIONS.</p> <p><u>OR</u></p> <p>One or more SFU subsystems inoperable due to an inoperable CBE boundary during movement of irradiated fuel assemblies in the secondary containment during CORE ALTERATIONS.</p>	<p><u>NOTE</u></p> <p>LCO 3.0.3 is not applicable.</p> <p>F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p>F.2 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p> <p>+</p> <p>+</p> <p>Immediately</p> <p>+</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.4.1 Operate each SFU subsystem for ≥ 15 minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.4.2 Perform required SFU filter testing in accordance with the Ventilation Filter Testing Program (VFTP).</p>	<p>In accordance with the VFTP</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.3	Verify each SFU subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.4.4	Perform required CBE unfiltered air leakage testing in accordance with the Control Building Envelope Habitability Program.	In accordance with the Control Building Envelope Habitability Program

Deleted

3.7 PLANT SYSTEMS

3.7.5 ~~Control Building Chiller (CBC) System~~

~~LCO 3.7.5 Two CBC subsystems shall be OPERABLE.~~

APPLICABILITY: ~~MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary
containment,
During CORE ALTERATIONS.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CBC subsystem inoperable.	A.1 Restore CBC subsystem to OPERABLE status.	30 days
B. Two CBC subsystems inoperable.	B.1 Verify control building area temperatures < 90°F.	Once per 4 hours
	<u>AND</u> B.2 Restore one CBC subsystem to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment during CORE ALTERATIONS.</p>	<p><u>NOTE</u> LCO 3.0.3 is not applicable.</p>	
	<p>D.1 Place OPERABLE CBC subsystem in operation.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	<p>Immediately</p>
<p><u>AND</u></p>		
	<p>D.2.2 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. Required Action and associated Completion Time of Condition B not met during movement of irradiated fuel assemblies in the secondary containment during CORE ALTERATIONS.</p>	<p><u>NOTE</u> LCO 3.0.3 is not applicable.</p>	<p>Immediately</p> <p style="text-align: right;">+</p> <p style="text-align: right;">+</p> <p style="text-align: right;">+</p>
	<p>E.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p>E.2 Suspend CORE ALTERATIONS.</p>	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1 Verify each CBC subsystem has the capability to remove the available heat load.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

3.7 PLANT SYSTEMS Deleted

3.7.6 Main Condenser Offgas

~~LCO 3.7.6 The gross gamma activity rate of the noble gases measured at the Steam Jet Air Ejector (SJAE) offgas pretreatment monitor shall be ≤ 1.0 Ci/second after decay of 30 minutes.~~

APPLICABILITY: ~~MODE 1, MODES 2 and 3 with any main steam line not isolated and SJAE in operation.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Gross gamma activity rate of the noble gases not within limit.	A.1 Restore gross gamma activity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines. <u>OR</u> B.2 Isolate SJAE. <u>OR</u> B.3.1 Be in MODE 3. <u>AND</u> B.3.2 Be in MODE 4.	12 hours 12 hours 12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.6.1</p> <hr/> <p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be performed until 31 days after any main steam line not isolated and SJAЕ in operation.</p> <hr/> <p>Verify the gross gamma activity rate of the noble gases is ≤ 1.0 Ci/second after decay of 30 minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Once within 4 hours after a $\geq 50\%$ increase in the nominal steady state fission gas release after factoring out increases due to changes in THERMAL POWER level</p>

3.7 PLANT SYSTEMS

3.7.7 The Main Turbine Bypass System

Deleted

~~LCO 3.7.7~~

~~The Main Turbine Bypass System shall be OPERABLE.~~

OR

~~LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR, are made applicable.~~

APPLICABILITY: THERMAL POWER \geq 21.7% RTP.

+

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B.	Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 21.7% RTP.	4 hours

+

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify one complete cycle of each main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LCO 3.7.8 The spent fuel storage pool water level shall be ≥ 36 ft.

APPLICABILITY: During movement of irradiated fuel assemblies in the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel storage pool water level not within limit.	<p>A.1 NOTE LCO 3.0.3 is not applicable.</p> <hr/> <p>Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.8.1 Verify the spent fuel storage pool water level is ≥ 36 ft.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

Deleted

3.7.9 ~~Control Building/Standby Gas Treatment (CB/SBGT) Instrument Air System~~

~~LCO 3.7.9 Two CB/SBGT Instrument Air subsystems shall be OPERABLE.~~

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One CB/SBGT Instrument Air subsystem inoperable.</p>	<p>A.1 Declare required feature(s), supported by the inoperable CB/SBGT Instrument Air subsystem, inoperable when the redundant required feature(s) are inoperable.</p>	<p>4 hours from discovery of Condition A concurrent with inoperability of redundant required feature(s)</p>
	<p><u>AND</u></p> <p>A.2 Restore the CB/SBGT Instrument Air subsystem to OPERABLE status.</p>	
<p>B. Required Action and Associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>Both CB/SBGT Instrument Air subsystems inoperable.</p>	<p>B.1 Be in MODE 3.</p>	<p>12 hours</p>
	<p><u>AND</u></p> <p>B.2 Be in MODE 4.</p>	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operates each CB/SBGT Instrument Air compressor for ≥ 20 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Verify each CB/SBGT Instrument Air subsystem actuates on an actual or simulated initiation signal and maintains air pressure ≥ 75 psig in the receiver.	In accordance with the Surveillance Frequency Control Program

DELETED

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources — Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

- a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and
- b. Two diesel generators (DGs).

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

NOTE

LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour
	AND	AND
	A.2 Restore offsite circuit to OPERABLE status.	Once per 24 hours thereafter
		Prior to entering MODE 2 from MODE 3 or 4

(continued)

Amendment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One DG inoperable.</p>	<p>B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).</p> <p><u>AND</u></p> <p>B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.</p> <p><u>AND</u></p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued)</p>	<p>B.3 Determine OPERABLE DG is not inoperable due to common cause failure.</p> <p><u>AND</u></p> <p>NOTE Not required to be performed when the cause of the inoperable DG is pre-planned, preventive maintenance and testing.</p> <p>B.4 Perform SR 3.8.1.2 for OPERABLE DG.</p> <p><u>AND</u></p> <p>B.5 Restore DG to OPERABLE status.</p>	<p>24 hours</p> <p>Once per 72 hours</p> <p>7 days</p> <p><u>AND</u></p> <p>8 days from discovery of failure to meet LCO expect for Condition A</p>
<p>G. Two offsite circuits inoperable.</p>	<p>C.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.</p>	<p>12 hours from discovery of Condition G concurrent with inoperability of redundant required feature(s)</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. (continued)	<p><u>AND</u></p> <p>G.2 Restore one offsite circuit to OPERABLE status.</p>	<p>24 hours</p> <p><u>AND</u></p> <p>8 days from discovery of failure to meet LCO except for Condition A</p>
D. Two DGs inoperable.	D.1 Restore one DG to OPERABLE status.	2 hours
E. Required Action and Associated Completion Time of Condition A, B, C, or D not met.	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
F. Three or more AC sources inoperable.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	<p style="text-align: center;"><u>NOTES</u></p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. 3. When a DG is placed in an inoperable status solely for the performance of testing required by Required Actions B.3 or B.4, entry into associated Conditions and Required Actions may be delayed for up to 2 hours. <hr/> <p>Verify each DG starts from standby conditions and achieves steady state voltage $\geq 3744v$ and $\leq 4576v$ and frequency $\geq 59.5Hz$ and $\leq 60.5Hz$.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	<p style="text-align: center;"><u>NOTES</u></p> <ol style="list-style-type: none"> 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. <hr/> <p>Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load $\geq 2750\text{kw}$ and $\leq 2950\text{kw}$.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.8.1.4	<p>Verify each tank contains ≥ 220 gal of fuel oil.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.8.1.5	<p>Check for the presence of water in the fuel oil in each day tank and remove water as necessary.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.6	Verify the fuel oil transfer system operates to transfer fuel oil from storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	<p style="text-align: center;"><u>NOTE</u></p> <p>All DG starts may be preceded by an engine prelube period.</p> <hr/> <p>Verify each DG starts from standby condition and achieves:</p> <p>a. in ≤ 10 seconds, voltage $\geq 3744V$ and frequency $\geq 59.5Hz$; and</p> <p>b. steady state, voltage $\geq 3744V$ and $\leq 4576V$ and frequency $\geq 59.5Hz$ and $\leq 60.5Hz$.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8	<p style="text-align: center;"><u>NOTE</u></p> <p>The Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify automatic slow transfer of AC power supply from the Startup Transformer to the Standby Transformer.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9</p> <p style="text-align: center;"><u>NOTE</u></p> <p>This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and:</p> <ul style="list-style-type: none"> a. Following load rejection, the frequency is $\leq 64.5\text{Hz}$. b. Within 1.3 seconds following load rejection, the voltage is $\geq 3744\text{V}$ and $\leq 4576\text{V}$. c. Within 3.9 seconds following load rejection, the frequency is $\geq 59.5\text{Hz}$ and $\leq 60.5\text{Hz}$. 	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.10</p> <p style="text-align: center;"><u>NOTE</u></p> <p>This Surveillance shall not be performed in MODE 1, 2 or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify each DG's automatic trips are bypassed on an actual or simulated Loss of Offsite Power (LOOP) signal or on an actual or simulated ECCS initiation signal except:</p> <ul style="list-style-type: none"> a. Engine overspeed; and b. Generator lockout. 	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11</p> <hr/> <p style="text-align: center;">NOTE</p> <p>This Surveillance shall not be performed in MODE 1, 2 or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify under manual control each DG:</p> <ul style="list-style-type: none"> a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready to load operation. 	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.12</p> <hr/> <p style="text-align: center;">NOTE</p> <p>This Surveillance shall not be performed in MODE 1, 2 or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify interval between each sequenced load block is ≥ 2 seconds.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13</p> <hr/> <p style="text-align: center;"><u>NOTES</u></p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. <hr/> <p>Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ol style="list-style-type: none"> a. De-energization of essential buses; b. Load shedding from essential buses; and c. DG auto start from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads in the proper timed sequence, 3. achieves steady state voltage $\geq 3744V$ and $\leq 4576V$, 4. achieves steady state frequency $\geq 59.5Hz$ and $\leq 60.5Hz$, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes. 	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.2 AC Sources — Shutdown~~

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

- ~~a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(e) required by LCO 3.8.8, "Distribution Systems — Shutdown"; and~~
- ~~b. One Diesel Generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(e) required by LCO 3.8.8.~~

~~APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.~~

ACTIONS

NOTE
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	NOTE Enter applicable Condition and Required Actions of LCO 3.8.8, with one required division de-energized as a result of Condition A.	
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately	
<u>AND</u>		
A.2.3 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately	

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	B.2 Suspend movement of irradiated fuel assemblies in secondary containment	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1</p> <p style="text-align: center;"><u>NOTES</u></p> <p>1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.13.</p> <p>2. SR 3.8.1.13 is considered to be met without the ECGS initiation signals OPERABLE when the ECGS initiation signals are not required to be OPERABLE per Table 3.3.5.1-1.</p> <hr/> <p>For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, except SR 3.8.1.8, are applicable.</p>	<p>In accordance with applicable SRs</p>

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air~~

~~ECO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required Diesel Generator (DG).~~

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

NOTE

For Conditions B, E, and F, separate Condition entry is allowed for each DG.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel oil level less than a 7 day supply and greater than a 6 day supply.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory less than a 7 day supply and greater than a 6 day supply.	B.1 Restore lube oil inventory to within limits.	48 hours
C. Stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limits.	30 days

(continued)

~~ACTIONS (continued)~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. New fuel oil properties not within limits.</p>	<p>D.1 Restore stored fuel oil properties to within limits.</p>	<p>30 days</p>
<p>E. One or more DGs with required starting air receiver pressures < 150 psig and ≥ 75 psig.</p>	<p>E.1 Restore required starting air receiver pressure to within limits.</p>	<p>48 hours</p>
<p>F. Required Action and associated Completion Time not met.</p> <p>OR</p> <p>One or more DGs with diesel fuel oil, lube oil, or starting air subsystems not within limits for reasons other than Condition A, B, C, D, or E.</p>	<p>F.1 Declare associated DG inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify fuel oil storage tank contains a ≥ 7 day supply of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify lube oil inventory is a ≥ 7 day supply for each DG.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify required air start receiver pressure is ≥ 150 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for the presence of water in the fuel oil in the fuel oil storage tank and remove water as necessary.	In accordance with the Surveillance Frequency Control Program

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.4 DC Sources — Operating~~

~~LCO 3.8.4 Both Division 1 and Division 2 125 VDC electrical power subsystems and the 250 VDC electrical power subsystem shall be OPERABLE.~~

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

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One 125 VDC electrical power subsystem inoperable.	A.1	Restore 125 VDC electrical power subsystem to OPERABLE status.
		A.2.1	Declare required feature(s), supported by the inoperable 125 VDC source, inoperable when the redundant required feature(s) are inoperable.
<u>OR</u>	<u>NOTE:</u> May be used on a one-time only basis for each battery division.	<u>AND</u>	
		A.2.2	Restore 125 VDC electrical power subsystem to OPERABLE status.
B.	Required Action and Associated Completion Time of Condition A not met.	B.1	Be in MODE 3.
		<u>AND</u>	
		B.2.	Be in MODE 4.
C.	250 VDC electrical power subsystem inoperable.	C.1	Declare associated supported features inoperable.
D.	Two or more DC electrical power subsystems inoperable.	D.1	Enter LCO 3.0.3.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 130.5 V on float charge for the 125 VDC battery and ≥ 252 V for the 250 VDC battery.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. <u>OR</u> Verify battery connection resistance within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.4	Remove visible corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.5	Verify battery connection resistance within limits.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p style="text-align: center;">NOTE</p> <p>This Surveillance shall not be performed on the required battery chargers in MODE 1, 2 or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <p>SR 3.8.4.6 Verify each required battery charger supplies ≥ 293 amps at ≥ 132.5 V for the 125 VDC subsystem and ≥ 200 amps at ≥ 258 V for the 250 VDC subsystem.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.4.7 NOTES</p> <p>1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7.</p> <p>2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <p>Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.8</p> <hr/> <p style="text-align: center;"><u>NOTE</u></p> <p>This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.</p> <hr/> <p>Verify battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>12 months when battery shows degradation or has reached 85% of expected life with capacity $< 100\%$ of manufacturer's rating</p> <p><u>AND</u></p> <p>24 months when battery has reached 85% of the expected life with capacity $\geq 100\%$ of manufacturer's rating</p>

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.5 DC Sources — Shutdown~~

~~LCO 3.8.5 DC electrical power subsystems shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems — Shutdown."~~

~~APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.~~

~~ACTIONS~~

~~NOTE
LCO 3.0.3 is not applicable.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	AND	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.5.1</p> <hr/> <p style="text-align: center;">NOTE</p> <p>The following SRs are not required to be performed: SR 3.8.4.7 and SR 3.8.4.8.</p> <hr/> <p>For DC electrical power subsystems required to be OPERABLE the following SRs are applicable:</p> <p>SR 3.8.4.1 SR 3.8.4.4 SR 3.8.4.7 SR 3.8.4.2 SR 3.8.4.5 SR 3.8.4.8. SR 3.8.4.3 SR 3.8.4.6</p>	<p>In accordance with applicable SRs</p>

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.6 Battery Cell Parameters~~

~~LCO 3.8.6 Battery cell parameters for the Division I and Division II 125 VDC and the 250 VDC batteries shall be within limits.~~ †

~~APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries with one or more battery cell parameters not within Table 3.8.6-1 Category A or B limits.	A.1 Verify pilot cell electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	1 hour
	<u>AND</u>	
	A.2 Verify parameters for required battery cells meet Table 3.8.6-1 Category C limits.	24 hours <u>AND</u> Once per 7 days thereafter
<u>AND</u>		
	A.3 Restore parameters for required battery cells to Table 3.8.6-1 Category A and B limits.	31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p>OR</p> <p>One or more batteries with average electrolyte temperature of the representative cells not within limits.</p> <p>OR</p> <p>One or more batteries with one or more battery cell parameters for required battery cells not within Table 3.8.6-1 Category C limits.</p>	<p>B.1 Declare associated battery inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after battery discharge < 110 V for 125 V and < 220 V for 250 V <u>AND</u> Once within 24 hours after battery overcharge > 150 V for 125 V and > 300 V for 250 V
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is $\geq 65^{\circ}\text{F}$ for each battery.	In accordance with the Surveillance Frequency Control Program

Table 3.8.6-1 (page 1 of 1)
Battery Cell Parameter Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and $\leq \frac{1}{4}$ inch above maximum level indication mark ^(a)	> Minimum level indication mark, and $\leq \frac{1}{4}$ inch above maximum level indication mark ^(a)	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity ^{(b)(c)}	≥ 1.105	≥ 1.100 <u>AND</u> Average of all connected cells > 1.200	Not more than 0.020 below average of all connected cells <u>AND</u> Average of all connected cells ≥ 1.190

- (a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during equalizing charges provided it is not overflowing.
- (b) Corrected for electrolyte temperature and level. Level correction is not required, however, when on float charge and battery charging current is < 2 amps.
- (c) A battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.7 Distribution Systems — Operating~~

~~LCO 3.8.7 The following AC and DC electrical power distribution subsystems shall be OPERABLE:~~

- ~~a. Division 1 and Division 2 AC electrical power distribution subsystems;~~
- ~~b. Division 1 and Division 2 125 VDC electrical power distribution subsystems;~~
- ~~c. 250 VDC electrical power distribution subsystem;~~
- ~~d. Intake structure electrical power distribution subsystems; and~~
- ~~e. 125 VDC RCIG Motor Control Center (MCC).~~

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

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One or more AC electrical power distribution subsystems inoperable, except for the intake structure electrical power distribution subsystems.	A.1 Restore AC electrical power distribution subsystems to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO 3.8.7.a or b
B.	One or more essential 125 VDC electrical power distribution subsystems inoperable except for the RCIG MCC.	B.1 Restore the 125 VDC electrical power distribution subsystems to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO 3.8.7.a or b

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. Required Action and associated Completion Time of Condition A or B not met.</p>	<p>G.1 Be in MODE 3. AND G.2 Be in MODE 4.</p>	<p>12 hours 36 hours</p>
<p>D. One or both intake structure electrical power distribution subsystem(s) inoperable.</p>	<p>D.1 Declare the associated River Water Supply subsystem(s) inoperable.</p>	<p>Immediately</p>
<p>E. 250 VDC electrical power distribution subsystem inoperable.</p>	<p>E.1 Declare associated supported features inoperable.</p>	<p>Immediately</p>
<p>F. 125 VDC RCIG MCG inoperable.</p>	<p>F.1 Declare associated supported features inoperable.</p>	<p>Immediately</p>
<p>G. Two or more electrical power distribution subsystems inoperable that result in a loss of function, for reasons other than Condition D.</p>	<p>G.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct breaker alignments and indicated power availability to required AC and DC electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program
SR 3.8.7.2	Verify proper coordination of the LPCI Swing Bus circuit breakers.	In accordance with the Surveillance Frequency Control Program

~~3.8 ELECTRICAL POWER SYSTEMS~~

~~3.8.8 Distribution Systems — Shutdown~~

~~LCO 3.8.8 The necessary portions of the AC and DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.~~

~~APPLICABILITY: MODES 4 and 5.
During movement of irradiated fuel assemblies in the secondary containment.~~

~~ACTIONS~~

~~NOTE~~

~~LCO 3.0.3 is not applicable.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC or DC electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	A.2.3 Initiate action to restore required AC and DC electrical power distribution subsystems to OPERABLE status.	Immediately
	AND	(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Declare associated required shutdown cooling subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.8.1 Verify correct breaker alignments and indicated power availability to required AC and DC electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

DELETED

3.9 ~~REFUELING OPERATIONS~~

3.9.1 ~~Refueling Equipment Interlocks~~

~~LCO 3.9.1 The refueling equipment interlocks associated with the Refuel position shall be OPERABLE.~~

~~APPLICABILITY: During in-vessel fuel movement with equipment associated with the interlocks when the reactor mode switch is in the Refuel position.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more required refueling equipment interlocks inoperable.</p>	<p>A.1 Suspend in-vessel fuel movement with equipment associated with the inoperable interlock(s).</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.9.1.1 Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs:</p> <ul style="list-style-type: none"> a. All rods in, b. Refuel platform position, c. Refuel platform fuel grapple, fuel loaded, d. Refuel platform fuel grapple fully retracted position, e. Refuel platform frame mounted hoist, fuel loaded, and f. Refuel platform monorail mounted hoist, fuel loaded. 	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.9 REFUELING OPERATIONS~~

~~3.9.2 Refuel Position One Rod-Out Interlock~~

~~LCO 3.9.2 The refuel position one rod-out interlock shall be OPERABLE.~~

~~APPLICABILITY: MODE 5 with the reactor mode switch in the Refuel position and any control rod withdrawn.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refuel position one rod-out interlock inoperable.	A.1 Suspend control rod withdrawal.	Immediately
	<u>AND</u> A.2. Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.9.2.1 Verify reactor mode switch locked in Refuel position.	In accordance with the Surveillance Frequency Control Program

~~(continued)~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.9.2.2</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be performed until 1 hour after any control rod is withdrawn.</p> <hr/> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.9 REFUELING OPERATIONS~~

~~3.9.3 Control Rod Position~~

~~LCO 3.9.3 All control rods shall be fully inserted.~~

~~APPLICABILITY: When loading fuel assemblies into the core.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE	FREQUENCY
SR 3.9.3.1 Verify all control rods are fully inserted.	In accordance with the Surveillance Frequency Control Program

~~3.9 REFUELING OPERATIONS~~

~~3.9.4 Control Rod Position Indication~~

~~LCO 3.9.4 The control rod "full in" position indication for each control rod shall be OPERABLE.~~

~~APPLICABILITY: MODE 5.~~

~~ACTIONS~~

~~NOTE~~

~~Separate Condition entry is allowed for each required position indication.~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required control rod position indications inoperable.	A.1.1 Suspend in-vessel fuel movement.	Immediately
	AND	
	A.1.2 Suspend control rod withdrawal.	Immediately
	AND	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	OR	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator.	Immediately
	<p style="text-align: center;"><u>AND</u></p> A.2.2 Initiate action to disarm the control rod drive associated with the fully inserted control rod.	Immediately

SURVEILLANCE REQUIREMENT

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify the required position indication has no "full in" indication on each control rod that is not "full in."	Each time the control rod is withdrawn from the "full in" position

~~3.0 REFUELING OPERATIONS~~

~~3.0.5 Control Rod OPERABILITY — Refueling~~

~~LCO 3.0.5 Each withdrawn control rod shall be OPERABLE.~~

APPLICABILITY: ~~MODE 5.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more withdrawn control rods inoperable.	A.1 Initiate action to fully insert inoperable withdrawn control rods.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.0.5.1</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be performed until 7 days after the control rod is withdrawn.</p> <hr/> <p>Insert each withdrawn control rod at least one notch.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.0.5.2</p> <p>Verify each withdrawn control rod seram accumulator pressure is \geq 840 psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.9 REFUELING OPERATIONS~~

~~3.9.6 Reactor Pressure Vessel (RPV) Water Level~~

~~LCO 3.9.6 RPV water level shall be \geq 23 ft above the top of the irradiated fuel assemblies seated within the RPV.~~

~~APPLICABILITY: During movement of irradiated fuel assemblies within the RPV, During movement of new fuel assemblies or handling of control rods within the RPV, when irradiated fuel assemblies are seated within the RPV.~~

~~ACTIONS~~

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	RPV water level not within limit.	A.1 Suspend movement of fuel assemblies and handling of control rods within the RPV.	Immediately

~~SURVEILLANCE REQUIREMENTS~~

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify RPV water level is \geq 23 ft above the top of the irradiated fuel assemblies seated within the RPV.	In accordance with the Surveillance Frequency Control Program

~~3.9 REFUELING OPERATIONS~~

~~3.9.7 Residual Heat Removal (RHR) High Water Level~~

~~LCO 3.9.7 One RHR shutdown cooling subsystem shall be OPERABLE; and in operation when reactor coolant temperature \geq 150 °F.~~

NOTE

~~The required RHR shutdown cooling subsystem may not be in operation for up to 2 hours per 8 hour period.~~

~~APPLICABILITY: MODE 5 with irradiated fuel in the Reactor Pressure Vessel (RPV) and the water level \geq 21 ft 1 inch above the top of the RPV flange.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Required RHR shutdown cooling subsystem inoperable.</p>	<p>A.1 Verify by administrative means an alternate method of decay heat removal is available.</p>	<p>1 hour <u>AND</u> Once per 24 hours thereafter</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Suspend loading irradiated fuel assemblies into the RPV. <u>AND</u></p>	<p>Immediately (continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued)</p>	<p>B.2 Initiate action to restore secondary containment to OPERABLE status.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.</p>	<p>Immediately</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. No RHR shutdown cooling subsystem in operation with reactor coolant temperature $\geq 150^{\circ}\text{F}$.	G.1 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter
	<u>AND</u> G.2 Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify one RHR shutdown cooling subsystem is operating when reactor coolant temperature is $\geq 150^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.9.7.2 Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

~~3.9 REFUELING OPERATIONS~~

~~3.9.8 Residual Heat Removal (RHR)—Low Water Level~~

~~LCO 3.9.8 Two RHR shutdown cooling subsystems shall be OPERABLE, and one RHR shutdown cooling subsystem shall be in operation.~~

NOTE

~~The required operating shutdown cooling subsystem may not be in operation for up to 2 hours per 8 hour period.~~

~~APPLICABILITY: MODE 5 with irradiated fuel in the Reactor Pressure Vessel (RPV) and the water level < 21 ft 1 inch above the top of the RPV flange.~~

ACTIONS

	<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
A.	One or two required RHR shutdown cooling subsystems inoperable.	A.1 Verify by administrative means an alternate method of decay heat removal is available for each inoperable required RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
B.	Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore secondary containment to OPERABLE status. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued)</p>	<p>B.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.</p> <p><u>AND</u></p> <p>B.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.</p>	<p>Immediately</p> <p>Immediately</p>
<p>G. No RHR shutdown cooling subsystem in operation.</p>	<p>C.1 Verify reactor coolant circulation by an alternate method.</p> <p><u>AND</u></p> <p>C.2 Monitor reactor coolant temperature.</p>	<p>1 hour from discovery of no reactor coolant circulation</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

DELETED

3.10 ~~SPECIAL OPERATIONS~~

3.10.1 ~~System Leakage and Hydrostatic Testing Operation~~

~~LCO 3.10.1~~ The average reactor coolant temperature specified in Table 1.1.4 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System Cold Shutdown," may be suspended, to allow reactor coolant temperature $> 212^{\circ}\text{F}$:

- ~~For performance of a system leakage or hydrostatic test,~~
- ~~As a consequence of maintaining adequate pressure for a system leakage or hydrostatic test, or~~
- ~~As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with a system leakage or hydrostatic test,~~

~~provided the following MODE 3 LCOs are met:~~

- a. ~~LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2.1;~~
- b. ~~LCO 3.6.4.1, "Secondary Containment";~~
- e. ~~LCO 3.6.4.2, "Secondary Containment Isolation Valves/Dampers (SCIV/Ds)"; and~~
- d. ~~LCO 3.6.4.3, "Standby Gas Treatment (SBGT) System."~~

~~APPLICABILITY: MODE 4 with average reactor coolant temperature $> 212^{\circ}\text{F}$.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A One or more of the above requirements not met.</p>	<p>A.1 NOTE</p> <p>Required Actions to be in MODE 4 include reducing average reactor coolant temperature to $\leq 212^{\circ}\text{F}$.</p> <hr/> <p>Enter the applicable Condition of the affected LCO.</p> <p><u>OR</u></p> <p>A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.</p> <p><u>AND</u></p> <p>A.2.2 Reduce average reactor coolant temperature to $\leq 212^{\circ}\text{F}$.</p>	<p>Immediately</p> <p>Immediately</p> <p>24 hours</p>

SURVEILLANCE REQUIREMENTS:

SURVEILLANCE	FREQUENCY
SR 3.10.1.1 Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

~~3.10 SPECIAL OPERATIONS~~

~~3.10.2 Reactor Mode Switch Interlock Testing~~

~~LCO 3.10.2 The reactor mode switch position specified in Table 1.1.1 for MODES 3, 4, and 5 may be changed to include the Run, Startup/Hot Standby, and Refuel position, and operation considered not to be in MODE 1 or 2, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:~~

- ~~a. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and~~
- ~~b. No CORE ALTERATIONS are in progress.~~

~~APPLICABILITY: MODES 3 and 4 with the reactor mode switch in the Run, Startup/Hot Standby, or Refuel position, MODE 5 with the reactor mode switch in the Run or Startup/Hot Standby position.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.1 One or more of the above requirements not met.	A.1 Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>	
	A.2 Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A (continued)	A.3.1 Place the reactor mode switch in the Shutdown position. <u>OR</u> A.3.2 <u>NOTE</u> Only applicable in MODE 5.	1 hour
	Place the reactor mode switch in the Refuel position.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.2.1 Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	In accordance with the Surveillance Frequency Control Program
SR 3.10.2.2 Verify no CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

~~3.10 SPECIAL OPERATIONS~~

~~3.10.3 Single Control Rod Withdrawal — Hot Shutdown~~

~~LCO 3.10.3~~ The reactor mode switch position specified in Table 1.1-1 for MODE 3 may be changed to include the Refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, provided the following requirements are met:

- ~~a. LCO 3.9.2, "Refuel Position One Red Out Interlock";~~
- ~~b. LCO 3.9.4, "Control Rod Position Indication";~~
- ~~c. All other control rods are fully inserted; and~~
- ~~d. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7.a, 7.b, 10, and 11 of Table 3.3.1.1-1,~~

~~LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," and~~

~~LCO 3.9.5, "Control Rod OPERABILITY — Refueling,"~~

OR

- ~~2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 3 requirements, may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod;~~

~~APPLICABILITY: MODE 3 with the reactor mode switch in the Refuel position.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A.1 One or more of the above requirements not met.</p>	<p>A.1 NOTES</p> <p>1. Required Actions to fully insert all insertable control rods including placing the reactor mode switch in the Shutdown position.</p> <p>2. Only applicable if the requirement not met is a required LCO.</p>	
	<p>Enter the applicable Condition of the affected LCO.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>A.2.1 Initiate action to fully insert all insertable control rods.</p>	<p>Immediately</p>
	<p><u>AND</u></p> <p>A.2.2 Place the reactor mode switch in the Shutdown position.</p>	<p>1 hour</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.10.3.1 Perform the applicable SRs for the required LCOs.</p>	<p>According to the applicable SRs</p>
<p>SR 3.10.3.2</p> <hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements.</p> <hr/> <p>Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.10.3.3 Verify all control rods, other than the control rod being withdrawn, are fully inserted.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.10 SPECIAL OPERATIONS~~

~~3.10.4 Single Control Rod Withdrawal — Cold Shutdown~~

~~LCO 3.10.4~~ The reactor mode switch position specified in Table 1.1.1 for MODE 4 may be changed to include the Refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, and subsequent removal of the associated Control Rod Drive (CRD) if desired, provided the following requirements are met:

- ~~a. All other control rods are fully inserted;~~
- ~~b. 1. LCO 3.9.2, "Refuel Position One Rod Out Interlock," and LCO 3.9.4, "Control Rod Position Indication,"~~

~~OR~~

- ~~2. A control rod withdrawal block is inserted;~~
- ~~e. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7.a, 7.b, 10, and 11 of Table 3.3.1.1 1, LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," and LCO 3.9.5, "Control Rod OPERABILITY — Refueling,"~~

~~OR~~

- ~~2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 4 requirements, may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod;~~

~~APPLICABILITY: MODE 4 with the reactor mode switch in the Refuel position.~~

ACTIONS

NOTE

Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more of the above requirements not met with the affected control rod insertable.</p>	<p>A.1 <u>NOTES</u></p> <p>1. Required Actions to fully insert all insertable control rods include placing the reactor mode switch in the Shutdown position.</p> <p>2. Only applicable if the requirement not met is a required LCO.</p>	
	<p>Enter the applicable Condition of the affected LCO.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>A.2.1 Initiate action to fully insert all insertable control rods.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>A.2.2 Place the reactor mode switch in the Shutdown position.</p>	<p>1 hour</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more of the above requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated GRD.	Immediately
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.4.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.4.2 <u>NOTE</u> Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.e.1 requirements. Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.4.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.4.4	<hr/> <p style="text-align: center;">NOTE</p> <p>Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.b.1 requirements.</p> <hr/> <p>Verify a control rod withdrawal block is inserted.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

~~3.10 SPECIAL OPERATIONS~~

~~3.10.5 Single Control Rod Drive (GRD) Removal — Refueling~~

~~LCO 3.10.5~~ The requirements of LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation"; LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring"; LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.9.2, "Refuel Position One Red Out Interlock"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY — Refueling," may be suspended in MODE 5 to allow the removal of a single GRD associated with a control rod withdrawn from a core cell containing one or more fuel assemblies, provided the following requirements are met:

- ~~a. All other control rods are fully inserted;~~
- ~~b. All other control rods in a five by five array centered on the withdrawn control rod are disarmed;~~
- ~~c. A control rod withdrawal block is inserted and LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod; and~~
- ~~d. No other CORE ALTERATIONS are in progress.~~

~~APPLICABILITY: MODE 5 with LCO 3.9.5 not met.~~

~~ACTIONS~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend removal of the GRD mechanism. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.5.1 Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.2 Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, in a five by five array centered on the control rod withdrawn for the removal of the associated CRD, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.3 Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.4 Perform SR 3.1.1.1.	According to SR 3.1.1.1

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.5.5	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

~~3.10 SPECIAL OPERATIONS~~

~~3.10.6 Multiple Control Rod Withdrawal — Refueling~~

- ~~LCO 3.10.6~~ ~~The requirements of LCO 3.9.3, "Control Rod Position"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY — Refueling," may be suspended, and the "full in" position indicators may be bypassed for any number of control rods in MODE 5, to allow withdrawal of these control rods, removal of associated Control Rod Drives (CRDs), or both, provided the following requirements are met:~~
- ~~a. The four fuel assemblies are removed from the core cells associated with each control rod or CRD to be removed;~~
 - ~~b. All other control rods in core cells containing one or more fuel assemblies are fully inserted; and~~
 - ~~c. Fuel assemblies shall only be loaded in compliance with an approved reload sequence.~~

~~APPLICABILITY: MODE 5 with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more of the above requirements not met.</p>	<p>A.1 Suspend withdrawal of control rods and removal of associated CRDs.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>A.2 Suspend loading fuel assemblies.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	<p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u>	
	A.3.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.6.1 Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.2 Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.3	
<u>NOTE</u> Only required to be met during fuel loading.	
Verify fuel assemblies being loaded are in compliance with an approved reload sequence.	In accordance with the Surveillance Frequency Control Program

~~3.10 SPECIAL OPERATIONS~~

~~3.10.7 Control Rod Testing — Operating~~

~~LCO 3.10.7~~ The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM demonstrations, control rod scram time testing, and control rod friction testing, provided:

a. ~~The Banked Position Withdrawal Sequence requirements of SR 3.3.2.1.7 are changed to require the control rod sequence to conform to the specified test sequence.~~

OR

b. ~~The RWM is bypassed; the requirements of LCO 3.3.2.1, "Control Rod Block Instrumentation," Function 2 are suspended; and conformance to the approved control rod sequence for the specified test is verified by a second licensed operator or other qualified member of the technical staff.~~

APPLICABILITY: ~~MODES 1 and 2 with LCO 3.1.6 not met.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend performance of the test and exception to LCO 3.1.6.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.7.1	<p style="text-align: center;">NOTE</p> <p>Not required to be met if SR 3.10.7.2 satisfied.</p> <hr/> <p>Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.</p>	During control rod movement
SR 3.10.7.2	<p style="text-align: center;">NOTE</p> <p>Not required to be met if SR 3.10.7.1 satisfied.</p> <hr/> <p>Verify control rod sequence input to the RWM is in conformance with the approved control rod sequence for the specified test.</p>	Prior to control rod movement

~~3.10 SPECIAL OPERATIONS~~

~~3.10.8 SHUTDOWN MARGIN (SDM) Test — Refueling~~

~~LCO 3.10.8~~

~~The reactor mode switch position specified in Table 1.1.1 for MODE 5 may be changed to include the Startup/Hot Standby position, and operation considered not to be in MODE 2, to allow SDM testing, provided the following requirements are met:~~

- ~~a. LCO 3.3.1.1, "Reactor Protection System Instrumentation," MODE 2 requirements for Functions 2.a and 2.d of Table 3.3.1.1.1;~~
- ~~b. 1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 2 of Table 3.3.2.1.1, with the Banked Position Withdrawal Sequence requirements of SR 3.3.2.1.7 changed to require the control rod sequence to conform to the SDM test sequence,~~

~~OR~~

- ~~2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;~~
- ~~e. Each withdrawn control rod shall be coupled to the associated GRD;~~
- ~~d. All control rod withdrawals during out of sequence control rod moves shall be made in notch out mode;~~
- ~~e. No other CORE ALTERATIONS are in progress; and~~
- ~~f. GRD charging water header pressure \geq 970 psig.~~

~~APPLICABILITY: MODE 5 with the reactor mode switch in Startup/Hot Standby position.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. <u>NOTE</u> Separate Condition entry is allowed for each control rod.</p> <hr/> <p>One or more control rods not coupled to its associated CRD.</p>	<p><u>NOTE</u> Red Worth Minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation.</p> <hr/> <p>A.1 Fully insert inoperable control rod.</p> <p><u>AND</u></p> <p>A.2 Disarm the associated CRD.</p>	<p>3 hours</p> <p>4 hours</p>
<p>B. One or more of the LCO requirements not met for reasons other than Condition A.</p>	<p>B.1 Place the reactor mode switch in the Shutdown or Refuel position.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a and 2.d of Table 3.3.1.1-1.	According to the applicable SRs
SR 3.10.8.2	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met if SR 3.10.8.3 satisfied.</p> <p>Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.</p>	According to the applicable SRs
SR 3.10.8.3	<p style="text-align: center;"><u>NOTE</u></p> <p>Not required to be met if SR 3.10.8.2 satisfied.</p> <p>Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.</p>	During control rod movement
SR 3.10.8.4	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.8.5	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to "full out" position <u>AND</u> Prior to satisfying LCO 3.10.8.e requirement after work on control rod or CRD System that could affect coupling
SR 3.10.8.6	Verify CRD charging water header pressure \geq 070 psig.	In accordance with the Surveillance Frequency Control Program

4.0 DESIGN FEATURES

4.1 Site Location

The plant site, which consists of approximately 500 acres, is adjacent to the Cedar River approximately 2.5 miles northeast of the Village of Palo, Iowa. ~~Distance from the reactor centerline to the nearest site boundary is approximately 2000 ft.~~ The boundary of the exclusion area defined in 10 CFR 100 is delineated by the property lines. The distance to the outer boundary of the low population zone is 6 miles. The plan of the site is shown on UFSAR Figures 1.2-1 and 1.2-2.

4.2 ~~Reactor Core~~

Deleted

~~4.2.1 Fuel Assemblies~~

~~The reactor shall consist of not more than 368 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material, and water rods. Limited substitution of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with NRC staff approved codes and methods and have been shown by tests or analyses to comply with all safety design bases. A limited number of load test assemblies that have not completed representative testing may be placed in nonlimiting core regions.~~

~~4.2.2 Control Rod Assemblies~~

~~The reactor core shall contain 80 cruciform shaped control rod assemblies. The control materials shall be boron carbide and hafnium metal, as approved by the NRC.~~

(continued)

4.0 DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having the following limits for maximum k-infinity in the normal reactor core configuration at cold conditions and maximum lattice-average U-235 enrichment weight percent:

	k_{∞}	wt %
i) 7x7 and 8x8 pin arrays (Legacy Fuel Assemblies only; Holtec and PaR racks)	≤ 1.29	≤ 4.6
ii) 10x10 pin arrays (Holtec and PaR racks)	≤ 1.29	≤ 4.95

- b. $k_{\text{eff}} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in 9.1 of the UFSAR; and
- c. A nominal 6.060 inches for HOLTEC designed and 6.625 inches for PaR designed center to center distance between fuel assemblies placed in the storage racks.
- d. The Boral neutron absorber shall have a ^{10}B areal density greater than or equal to 0.0162 grams $^{10}\text{B}/\text{cm}^2$ with an uncertainty of 0.0012 grams $^{10}\text{B}/\text{cm}^2$.

~~4.3.1.2 The new fuel storage racks are designed and shall be maintained with:~~

- ~~a. Fuel assemblies having a maximum k-infinity of 1.31 in the normal reactor core configuration at cold conditions;~~
- ~~b. $k_{\text{eff}} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;~~
- ~~c. $k_{\text{eff}} \leq 0.90$ if dry, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR; and~~
- ~~d. A nominal 6.625 inch center to center distance between fuel assemblies placed in storage racks.~~

(continued)

4.0 DESIGN FEATURES (continued)

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 831 ft. – 2 3/4 in.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2563 fuel assemblies in a vertical orientation, including no more than 152 fuel assemblies stored in the cask pit in accordance with UFSAR Section 9.1. †

~~The new fuel storage vault is equipped with racks for storage of up to 110 fuel assemblies in a vertical orientation.~~

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

- 5.1.1 The plant manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affects nuclear safety.

- 5.1.2 The Operations Shift Manager shall be responsible for the control room command function. During any absence of the Operations Shift Manager from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the Operations Shift Manager from the control room while the unit is in MODE 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.
-

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant specific titles of those personnel fulfilling the responsibilities of the positions delineated in the Technical Specifications shall be documented in the UFSAR or QA Program Description;
- b. The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The corporate officer with direct responsibility for the plant shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

(continued)

5.2 Organization (continued)

5.2.2 Unit Staff

The unit staff organization shall also include the following:

- a. A non-licensed operator shall be assigned to the reactor when containing fuel and an additional non-licensed operator shall be assigned to the reactor when operating in MODES 1, 2, or 3.
- b. Shift crew composition shall meet the requirements stipulated herein and in 10 CFR 50.54(m).
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- d. A person qualified to implement radiation protection procedures shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
- e. Not used. †
- f. The Operations Manager or Operations Supervisors shall hold an SRO license.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

- g. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. This function is not required in MODES 4 and 5.
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5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

- 5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications referenced for comparable positions in ANSI/ANS 3.1-1978. The radiation protection manager shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.
- 5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).
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5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

- 5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:
- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
 - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
 - c. Quality assurance for effluent and environmental monitoring;
 - d. [Deleted]; and
 - e. All programs specified in Specifications 5.5.
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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented and maintained.

5.5.1 Offsite Dose Assessment Manual (ODAM)

- a. The ODA M shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODA M shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and Radioactive Material Release Report required by Specification 5.6.2 and Specification 5.6.3.
- c. Licensee initiated changes to the ODA M:
 1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - a. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - b. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculations;
 2. Shall become effective after the approval of the plant manager; and
 3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODA M as a part of or concurrent with the Radioactive Material Release Report for the period of the report in which any change in the ODA M was made. Each change shall be identified by

(continued)

5.5 Programs and Manuals

5.5.1 Offsite Dose Assessment Manual (ODAM) (continued)

markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 ~~Primary Coolant Sources Outside Containment~~

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~~This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, Reactor Water Cleanup (only to second isolation valve), Post Accident Sampling (until such time as a modification eliminates PASS as a potential leakage path), Containment Atmospheric Monitoring, Control Rod Drive (scram discharge volume only) and Liquid Radwaste (only Reactor Building Floor and Equipment Drain sump pumps, piping, and tanks up to and including collector tanks). The program shall include the following:~~

- ~~a. Preventive maintenance and periodic visual inspection requirements; and~~
- ~~b. System leak test requirements for each system at least once per 24 months.~~

~~The provisions of SR 3.0.2 are applicable.~~

5.5.3 {Deleted}

(continued)

5.5 Programs and Manuals (continued)

5.5.4 Radioactive Effluent Controls Program

This program, conforming to 10 CFR 50.36a, provides for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODAM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODAM;
- b. Limitations on the concentrations of radioactive material released in liquid effluents from the site to unrestricted areas, conforming to ten times (10x) the concentrations listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 – 20.2402;
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents pursuant to 10 CFR 20.1302 and with the methodology and parameters in the ODAM;
- d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODAM at least every 31 days;
- f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems which were used to establish compliance with the design objectives in 10 CFR 50, Appendix I, Section II be used when specified to provide reasonable assurance that releases of radioactive material in liquid and gaseous effluents be kept as low as reasonably achievable;

(continued)

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

- g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be limited to the following:
 - 1. For noble gases: less than or equal to a dose rate of 500 mrem/yr to the whole body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
 - 2. For iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives > 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ;
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

5.5.5 Component Cyclic or Transient Limit

~~This program provides controls to track the UFSAR Section 5.3.3, cyclic and transient occurrences to ensure that components are maintained within the design limits.~~

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(continued)

5.5 Programs and Manuals (continued)

5.5.6 DELETED

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(continued)

5.5 Programs and Manuals (continued)

5.5.7

Ventilation Filter Testing Program (VFTP)

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A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems.

The tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed once per 12 months for standby service, after 720 hours of system operation, following significant painting, fire or chemical release in any ventilation zone communicating with the system, after any structural maintenance on the system housing, and after each partial or complete replacement of the HEPA filter train or charcoal adsorber, respectively.

The test described in Specification 5.5.7.c shall be performed once per 12 months for standby service, after 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.

The test described in Specification 5.5.7.d shall be performed annually. ✕

For the SBGT System only, the test described in Specification 5.5.7.e shall be performed after each complete or partial replacement of the HEPA filter bank and after any structural maintenance on the system housing. ✕

For the SBGT System only, the test described in Specification 5.5.7.f shall be performed in conjunction with the tests described in Specification 5.5.7.c. ✕

- a. Demonstrate for each of the ESF systems that an in-place test of the HEPA filters shows a penetration and system bypass at the value specified and at the system flowrate specified below:

ESF Ventilation System	Penetration and System Bypass (%)	Flowrate (cfm)
SBGT System	< 0.1	3600—4400
SFU System	< 1.0	900—1100

(continued)

5.5 Programs and Manuals

5.5.7 ~~Ventilation Filter Testing Program (VFTP) (continued)~~

- b. ~~Demonstrate for each of the ESF systems that an in-place test of the charcoal adsorber shows a penetration and system bypass at the value specified and at the system flowrate specified below:~~

ESF Ventilation System	Penetration and System Bypass (%)	Flowrate (cfm)
SBGT System	< 0.1	3600-4400
SFU System	< 1.0	900-1100

- e. ~~Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52 Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and the relative humidity specified below:~~

ESF Ventilation System	Penetration	Relative Humidity
SBGT System	< 0.5%	≥ 95%
SFU System	< 5.0%	≥ 95%

- d. ~~Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters (SBGT System only), and the charcoal adsorbers is less than the value specified below and at the system flowrate specified as follows:~~

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

ESF Ventilation System	Delta P (inches wg)	Flowrate (cfm)
SBGT System	< 11	3600—4400
SFU System	< 6	900—1100

- ~~e. Demonstrate that air distribution is uniform within 20% of averaged flow per unit across SBGT System HEPA filters.~~
- ~~f. Visually inspect the SBGT System charcoal adsorber to ensure no flow blockage has occurred.~~

~~The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.~~

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for ~~potentially explosive gas mixtures contained in the Offgas System downstream of the recombiners and the~~ quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures".

The program shall include:

- ~~a. The limits for concentrations of hydrogen in the Offgas System downstream of the recombiners and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);~~

(continued)

5.5 Programs and Manuals

5.5.8 ~~Explosive Gas and Storage Tank Radioactivity Monitoring Program~~
(continued)

- a. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is ≤ 50 curies, excluding tritium and dissolved or entrained noble gases. The liquid radwaste storage tanks in the Low-Level Radwaste Processing and Storage Facility are considered unprotected outdoor tanks.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the ~~Explosive Gas and Storage Tank Radioactivity Monitoring Program~~ surveillance frequencies. Deleted

5.5.9 ~~Diesel Fuel Oil Testing Program~~

~~A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:~~

- a. ~~Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:~~
- ~~1. An API gravity within limits;~~
 - ~~2. A viscosity within limits for ASTM 2-D fuel oil, and~~
 - ~~3. Water and sediment within limits;~~
- b. ~~Viscosity, water and sediment for stored ASTM 2-D fuel oil are within limits every 31 days; and~~
- c. ~~Total particulate concentration of the stored fuel oil is ≤ 10 mg/l when tested every 92 days.~~

~~The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program Testing Frequencies.~~

(continued)

5.5 Programs and Manuals (continued)

5.5.10 Technical Specifications (TS) Bases Control Program

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

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
 - 1. A change in the TS incorporated in the license; or
 - 2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.10b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.11 ~~Safety Function Determination Program (SFDP)~~

Deleted

~~This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6.~~

- a. ~~The SFDP shall contain the following:~~
 - 1. ~~Provisions for cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;~~

(continued)

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

2. ~~Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;~~
 3. ~~Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and~~
 4. ~~Other appropriate limitations and remedial or compensatory actions.~~
- b. ~~A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:~~
1. ~~A required system redundant to system(s) supported by the inoperable support system is also inoperable; or~~
 2. ~~A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or~~
 3. ~~A required system redundant to support system(s) for the supported systems (1) and (2) above is also inoperable.~~
- e. ~~The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.~~

Deleted

5.5.12 Primary Containment Leakage Rate Testing Program

- a. ~~A program shall be established to implement the leakage rate testing of the primary containment as required by 10 CFR 50.54(e) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions.~~
- b. ~~This program shall be in accordance with the guidelines contained in NEI 94-01, Revision 3-A, "Industry Guideline for Implementing Performance Based Option of 10 CFR 50, Appendix J," and conditions and limitations specified in NEI 94-01, Revision 2-A, as modified by the following exceptions:~~
 4. ~~DELETED~~

(continued)

5.5 Programs and Manuals

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

- 2. ~~Exemption from Section III.A of 10 CFR Part 50, Appendix J, Option B, to allow the contribution from Main Steam pathway leakage to be excluded from the overall integrated leakage rate from Type A tests.~~
- 3. ~~Exemption from Section II.B of 10 CFR Part 50, Appendix J, Option B, to allow the contribution from Main Stream pathway leakage to be excluded from the sum of the leakage rates from Type B and Type C tests.~~
- e. ~~The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 45.7 psig.~~
- d. ~~The maximum allowable primary containment leakage rate, L_a , at P_a , shall be 2.0% of primary containment air weight per day.~~
- e. ~~Leakage Rate acceptance criteria are:~~
 - 4. ~~Primary Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first startup following testing in accordance with this program, the leakage rate acceptance criteria are: $\leq 0.60 L_a$ for the Type B and Type C tests; and, $\leq 0.75 L_a$ for the Type A tests; and~~
 - 2. ~~The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05 L_a$ when tested at $\geq P_a$.~~
- f. ~~The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.~~

5.5.13 Control Building Envelope Habitability Program

~~A Control Building Envelope (CBE) Habitability Program shall be established and implemented to ensure that CBE habitability is maintained such that, with an OPERABLE Standby Filter Unit System, CBE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CBE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:~~

- a. ~~The definition of the CBE and the CBE boundary.~~
- b. ~~Requirements for maintaining the CBE boundary in its design condition including configuration control and preventive maintenance.~~

Deleted

(continued)

5.5 Programs and Manuals

5.5.13 Control Building Envelope Habitability Program (continued)

- ~~e. Requirements for (i) determining the unfiltered air leakage past the CBE boundary into the CBE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.107, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CBE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.107, Revision 0.~~
- ~~d. Measurement, at designated locations, of the CBE pressure relative to all external areas adjacent to the CBE boundary during the pressurization mode of operation by one subsystem of the SFU System, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a Staggered Test Basis*. The results shall be trended and used as part of the 24 month assessment of the CBE boundary.~~
- ~~e. The quantitative limits on unfiltered air leakage into the CBE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph e. The unfiltered air leakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that the exposure of CBE occupants to these hazards will be within the assumptions in the licensing basis.~~
- ~~f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CBE habitability, determining CBE unfiltered inleakage, and measuring CBE pressure and assessing the CBE boundary as required by paragraphs e and d, respectively.~~

(continued)

* A Staggered Test Basis shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

5.5 Programs and Manuals

5.5.14 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

- a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
- b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
- c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

5.5.15 Spent Fuel Pool Neutron Absorber Monitoring Program

This program provides routine monitoring and actions to ensure that the condition of Boral in the spent fuel pool racks is appropriately monitored to ensure that the Boral neutron attenuation capability described in the criticality safety analysis of UFSAR Section 9.1 is maintained. The program shall include the following:

- a. Neutron attenuation in situ testing for the PaR racks shall be performed at a frequency of not more than 10 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral areal density will be that value assumed in the criticality safety analysis.
 - b. Neutron attenuation testing of a representative Boral coupon for the Holtec racks shall be performed at a frequency of not more than 6 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral density will be that value assumed in the criticality safety analysis.
 - c. Description of appropriate corrective actions for discovery on nonconforming Boral.
-

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 DELETED +

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Assessment Manual (ODAM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODA M, as well as summarized and tabulated results of these analyses and measurements in the format of the table in Regulatory Guide 4.8. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

(continued)

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Material Release Report

The Radioactive Material Release Report covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODAM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 DELETED

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
1. The Average Planar Linear Heat Generation Rate (APLHGR) for Specification 3.2.1;
 2. The Minimum Critical Power Ratio (MCPR) for Specification 3.2.2;
 3. Exclusion Region in the Power/Flow Map for Specification 3.4.1; and
 4. The Minimum Critical Power Ratios (MCPR) in Table 3.3.2.1-1 for Specification 3.3.2.1.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in General Electric Standard Application for Reactor Fuel, NEDE-24011-P-A, (GESTAR II). The revision number is the one approved at the time the reload fuel analyses are performed.

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

DELETED

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 PAM Report

~~When a report is required by Condition B or F of LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method(s) of monitoring, describe the degree to which the alternate method(s) are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.~~

5.6.7 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, and hydrostatic testing as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

i) Limiting Conditions for Operation Section 3.4.9, "RCS Pressure and Temperature (P/T) Limits"

ii) Surveillance Requirements Section 3.4.9, "RCS Pressure and Temperature (P/T) Limits"

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following document:

5.6 Reporting Requirements

5.6.7 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (continued)

- i) SIR-05-044-A, "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors," Revision 1, dated June 2013.
 - c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.
-
-

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
- b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 1. A radiation monitoring device that continuously displays radiation dose rates in the area; or
 2. A radiation monitoring device that continuously transmits dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or
 4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and, (continued)

5.7 High Radiation Area (continued)

- (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2

High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
 - 1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.
 - 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

(continued)

5.7 High Radiation Area (continued)

- b. Access to, and activities in, each area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 - 1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached with an appropriate alarm setpoint, or
 - 2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
 - 3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
 - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, or personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

(continued)

5.7 High Radiation Area (continued)

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.
 - e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.
 - f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible light shall be activated at the area as a warning device.

Duane Arnold Energy Center
Docket No. 50-331
License Amendment Request
NG-19-0102 Enclosure, Attachment 1 Page 1 of 55

ATTACHMENT 2

REVISED TECHNICAL SPECIFICATION PAGES
(CLEAN, WITH PROPOSED CHANGES)

NEXTERA ENERGY DUANE ARNOLD, LLC
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE
DOCKET 50-331
DUANE ARNOLD ENERGY CENTER
RENEWED FACILITY LICENSE

Renewed License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for license filed by FPL Energy Duane Arnold, LLC,^{*} Central Iowa Power Cooperative and Corn Belt Power Cooperative (the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
 - B Deleted;
 - C. The facility will be maintained in conformity with the application, as amended; the provisions of the Act; and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this renewed license can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. NextEra Energy Duane Arnold, LLC is technically qualified and NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative are financially qualified to engage in the activities authorized by this renewed license in accordance with the rules and regulations of the Commission;
 - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this renewed license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the issuance of renewed Facility License No. DPR-49 is in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D have been satisfied;

^{*}On April 16, 2009, the name "FPL Energy Duane Arnold, LLC" was changed to "NextEra Energy Duane Arnold, LLC."

- I. Deleted.
2. Renewed Facility License No. DPR-49 is hereby issued to NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative (CIPCO) and Corn Belt Power Cooperative (Corn Belt) to read as follows:
 - A. This renewed license applies to the Duane Arnold Energy Center, a permanently defueled boiling water reactor and associated equipment (the facility), owned by NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative and operated by NextEra Energy Duane Arnold, LLC. The facility is located on NextEra Energy Duane Arnold, LLC's, Central Iowa Power Cooperative's and Corn Belt Power Cooperative's site near Palo in Linn County, Iowa. This site consists of approximately 500 acres adjacent to the Cedar River and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 1 through 14) and the Environmental Report as supplemented and amended (Supplements 1 through 5).
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) NextEra Energy Duane Arnold, LLC, pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess and use the facility as required for nuclear fuel storage; and CIPCO and Corn Belt to possess the facility at the designated location in Linn County, Iowa, in accordance with the procedures and limitations set forth in this license;
 - (2) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material that was used as reactor fuel, in accordance with the limitations for storage, as described in the Updated Final Safety Analysis Report, as supplemented and amended as of June 1992 and as supplemented by letters dated March 26, 1993, and November 17, 2000.
 - (3) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source or sealed sources for radiation monitoring equipment calibration, and to possess any byproduct, source and special nuclear material as sealed neutron sources previously used for reactor startup or reactor instrumentation; and fission detectors;
 - (4) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated radioactive apparatus components;
 - (5) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear materials that were produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Deleted

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. , are hereby incorporated in the license. NextEra Energy Duane Arnold, LLC shall maintain the facility in accordance with the Permanently Defueled Technical Specifications.

(3) Fire Protection Program

NextEra Energy Duane Arnold, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated August 5, 2011 (and supplements dated October 14, 2011, April 23, 2012, May 23, 2012, July 9, 2012, October 15, 2012, January 11, 2013, February 12, 2013, March 6, 2013, May 1, 2013, May 29, 2013, two supplements dated July 2, 2013, and supplements dated August 5, 2013 and August 28, 2013) and as approved in the safety evaluation report dated September 10, 2013. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

- Fire Alarm and Detection Systems (Section 3.8);
- Automatic and Manual Water-Based Fire Suppression Systems (Section 3.9);
- Gaseous Fire Suppression Systems (Section 3.10); and,
- Passive Fire Protection Features (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation report dated September 10, 2013 to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

Transition License Conditions

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) and (3) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
- (2) The licensee shall implement the modifications to its facility, as described in Enclosure 2, Attachment S, Table S-1, "Plant modifications Committed," of DAEC letter NG-13-0287, dated July 2, 2013, to complete the transition to full compliance with 10 CFR 50.48(c) by December 31, 2014. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
- (3) The licensee shall implement the items listed in Enclosure 2, Attachment S, Table S-2, "Implementation Items," of DAEC letter NG-13-0287, dated July 2, 2013, by March 9, 2014.
- (4) Deleted.
- (5) Physical Protection

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification,

(11) Deleted.

(12) Deleted.

(13) Deleted.

- D. This license is effective as of the date of Issuance and is effective until the Commission notifies the licensee in writing that the license is terminated.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by Eric J. Leeds

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Enclosures:

- 1 Appendix A Technical Specifications
- 2 Appendix B Additional Conditions

Date of Issuance: December 16, 2010

Renewed License No. DPR-49
Amendment

APPENDIX B

ADDITIONAL CONDITIONS

LICENSE NO. DPR-49

NextEra Energy Duane Arnold, LLC (the term licensee in Appendix B refers to NextEra Energy Duane Arnold, LLC or prior license holders) shall comply with the following conditions on the schedule noted below:

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
223 275	NextEra Energy Duane Arnold, LLC is authorized to relocate certain requirements included in Appendix A to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's application dated October 30, 1996, as supplemented and consolidated in its March 31, 1998, submittal. These relocations were evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 180 days of the date of this amendment.
260 (1) 275	NextEra Energy Duane Arnold shall take all necessary steps to ensure that the external trust fund is established at the time of the closing of the transfer of the license from Interstate Power (IPL) to FPLE Duane Arnold is maintained in accordance with the requirements of the December 23, 2005 order approving the license transfer, NRC regulations, and consistent with the safety evaluation supporting the order. The trust agreement shall be in a form acceptable to the NRC.	This amendment is effective immediately and shall be implemented within 30 days of the date of this amendment.
260 (2) 279	DELETED	
260 (3)	DELETED	

1.0 USE AND APPLICATION

1.1 Definitions

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.

1.0 USE AND APPLICATION

1.2 DELETED

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND Limiting Conditions for Operation (LCOs) specify minimum requirements for safely maintaining the facility. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Times(s).

DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the facility is in a specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the facility is not within the LCO Applicability.

IMMEDIATE COMPLETION TIME When “Immediately” is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The “specified Frequency” consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

The use of “met” or “performed” in these instances conveys specific meanings. A Surveillance is “met” only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being “performed,” constitutes a Surveillance not “met.” “Performance” refers only to the requirement to specifically determine the ability to meet the acceptance criteria.

(continued)

1.4 Frequency (continued)

EXAMPLE The following example illustrates the manner in which Frequencies are specified.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the facility is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the facility is in a specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified, then SR 3.0.3 becomes applicable.

2.0 DELETED

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the specified conditions in the Applicability, except as provided in LCO 3.0.2.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met.

LCO 3.0.3 Deleted.

LCO 3.0.4 Deleted.

LCO 3.0.5 Deleted.

LCO 3.0.6 Deleted.

LCO 3.0.7 Deleted.

LCO 3.0.8 Deleted.

LCO 3.0.9 Deleted.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1 SRs shall be met during the specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. 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 Frequency shall be failure to meet the LCO. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

SR 3.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, 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 Frequency, 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 Condition(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 Condition(s) must be entered.

(continued)

3.0 SR APPLICABILITY (continued)

SR 3.0.4 Entry into a specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3.

This provision shall not prevent entry into specified conditions in the Applicability that are required to comply with ACTIONS.

3.1 DELETED

3.2 DELETED

3.3 DELETED

3.4 DELETED

3.5 DELETED

3.6 DELETED

3.7 PLANT SYSTEMS

3.7.1 Deleted

3.7 PLANT SYSTEMS

3.7.2 Deleted

3.7 PLANT SYSTEMS

3.7.3 Deleted

3.7 PLANT SYSTEMS

3.7.4 Deleted

3.7 PLANT SYSTEMS

3.7.5 Deleted

3.7 PLANT SYSTEMS

3.7.6 Deleted

3.7 PLANT SYSTEMS

3.7.7 Deleted

3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LCO 3.7.8 The spent fuel storage pool water level shall be \geq 36 ft.

APPLICABILITY: During movement of irradiated fuel assemblies in the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel storage pool water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.8.1 Verify the spent fuel storage pool water level is \geq 36 ft.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.9 Deleted

3.8 DELETED

3.9 DELETED

3.10 DELETED

4.0 DESIGN FEATURES

4.1 Site Location

The plant site, which consists of approximately 500 acres, is adjacent to the Cedar River approximately 2.5 miles northeast of the Village of Palo, Iowa. The boundary of the exclusion area defined in 10 CFR 100 is delineated by the property lines. The distance to the outer boundary of the low population zone is 6 miles. The plan of the site is shown on UFSAR Figures 1.2-1 and 1.2-2.

4.2 Deleted

4.3 Fuel Storage

4.3.1 Criticality

The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having the following limits for maximum k-infinity in the normal reactor core configuration at cold conditions and maximum lattice-average U-235 enrichment weight percent:

	k_{∞}	wt %
i) 7x7 and 8x8 pin arrays (Legacy Fuel Assemblies only; Holtec and PaR racks)	≤ 1.29	≤ 4.6
ii) 10x10 pin arrays (Holtec and PaR racks)	≤ 1.29	≤ 4.95
- b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in 9.1 of the UFSAR; and
- c. A nominal 6.060 inches for HOLTEC designed and 6.625 inches for PaR designed center to center distance between fuel assemblies placed in the storage racks.
- d. The Boral neutron absorber shall have a ^{10}B areal density greater than or equal to 0.0162 grams $^{10}\text{B}/\text{cm}^2$ with an uncertainty of 0.0012 grams $^{10}\text{B}/\text{cm}^2$.

(continued)

4.0 DESIGN FEATURES (continued)

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 831 ft. – 2 3/4 in.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2563 fuel assemblies in a vertical orientation, including no more than 152 fuel assemblies stored in the cask pit in accordance with UFSAR Section 9.1.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The plant manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affects nuclear safety.

5.1.2 The Operations Shift Manager shall be responsible for the control room command function. During any absence of the Operations Shift Manager from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the Operations Shift Manager from the control room while the unit is in MODE 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant specific titles of those personnel fulfilling the responsibilities of the positions delineated in the Technical Specifications shall be documented in the UFSAR or QA Program Description;
- b. The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The corporate officer with direct responsibility for the plant shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

(continued)

5.2 Organization (continued)

5.2.2 Unit Staff

The unit staff organization shall also include the following:

- a. A non-licensed operator shall be assigned to the reactor when containing fuel and an additional non-licensed operator shall be assigned to the reactor when operating in MODES 1, 2, or 3.
 - b. Shift crew composition shall meet the requirements stipulated herein and in 10 CFR 50.54(m).
 - c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
 - d. A person qualified to implement radiation protection procedures shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
 - e. Not used.
 - f. The Operations Manager or Operations Supervisors shall hold an SRO license.
 - g. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. This function is not required in MODES 4 and 5.
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5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

- 5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications referenced for comparable positions in ANSI/ANS 3.1-1978. The radiation protection manager shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.
- 5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).
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5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

- 5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:
- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
 - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
 - c. Quality assurance for effluent and environmental monitoring;
 - d. [Deleted]; and
 - e. All programs specified in Specifications 5.5.
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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented and maintained.

5.5.1 Offsite Dose Assessment Manual (ODAM)

- a. The ODA M shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODA M shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and Radioactive Material Release Report required by Specification 5.6.2 and Specification 5.6.3.
- c. Licensee initiated changes to the ODA M:
 1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - a. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - b. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculations;
 2. Shall become effective after the approval of the plant manager; and
 3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODA M as a part of or concurrent with the Radioactive Material Release Report for the period of the report in which any change in the ODA M was made. Each change shall be identified by markings in the margins of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

(continued)

5.5 Programs and Manuals (continued)

5.5.2 Deleted

5.5.3 Deleted

5.5.4 Radioactive Effluent Controls Program

This program, conforming to 10 CFR 50.36a, provides for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODAM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODAM;
- b. Limitations on the concentrations of radioactive material released in liquid effluents from the site to unrestricted areas, conforming to ten times (10x) the concentrations listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 – 20.2402;
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents pursuant to 10 CFR 20.1302 and with the methodology and parameters in the ODAM;
- d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODAM at least every 31 days;

(continued)

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

- f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems which were used to establish compliance with the design objectives in 10 CFR 50, Appendix I, Section II be used when specified to provide reasonable assurance that releases of radioactive material in liquid and gaseous effluents be kept as low as reasonably achievable;
- g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be limited to the following:
 - 1. For noble gases: less than or equal to a dose rate of 500 mrem/yr to the whole body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
 - 2. For iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives > 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ;
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

(continued)

5.5 Programs and Manuals (continued)

5.5.5 Deleted

5.5.6 Deleted

5.5.7 Deleted

5.5.8 Storage Tank Radioactivity Monitoring Program

This program provides controls for the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures".

The program shall include a surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is ≤ 50 curies, excluding tritium and dissolved or entrained noble gases. The liquid radwaste storage tanks in the Low-Level Radwaste Processing and Storage Facility are considered unprotected outdoor tanks.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.9 Deleted

5.5.10 Technical Specifications (TS) Bases Control Program

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

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
 1. A change in the TS incorporated in the license; or

(continued)

5.5 Programs and Manuals

5.5.10 Technical Specifications (TS) Bases Control Program (continued)

2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.10b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.11 Deleted

5.5.12 Deleted

5.5.13 Deleted

5.5.14 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

- a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
- b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
- c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

(continued)

5.5 Programs and Manuals (continued)

5.5.15 Spent Fuel Pool Neutron Absorber Monitoring Program

This program provides routine monitoring and actions to ensure that the condition of Boral in the spent fuel pool racks is appropriately monitored to ensure that the Boral neutron attenuation capability described in the criticality safety analysis of UFSAR Section 9.1 is maintained. The program shall include the following:

- a. Neutron attenuation in situ testing for the PaR racks shall be performed at a frequency of not more than 10 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral areal density will be that value assumed in the criticality safety analysis.
 - b. Neutron attenuation testing of a representative Boral coupon for the Holtec racks shall be performed at a frequency of not more than 6 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral density will be that value assumed in the criticality safety analysis.
 - c. Description of appropriate corrective actions for discovery on nonconforming Boral.
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5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 DELETED

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Assessment Manual (ODAM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODA M, as well as summarized and tabulated results of these analyses and measurements in the format of the table in Regulatory Guide 4.8. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

(continued)

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Material Release Report

The Radioactive Material Release Report covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODAM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 DELETED

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 1. The Average Planar Linear Heat Generation Rate (APLHGR) for Specification 3.2.1;
 2. The Minimum Critical Power Ratio (MCPR) for Specification 3.2.2;
 3. Exclusion Region in the Power/Flow Map for Specification 3.4.1; and
 4. The Minimum Critical Power Ratios (MCPR) in Table 3.3.2.1-1 for Specification 3.3.2.1.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in General Electric Standard Application for Reactor Fuel, NEDE-24011-P-A, (GESTAR II). The revision number is the one approved at the time the reload fuel analyses are performed.

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 DELETED

5.6.7 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

- a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, and hydrostatic testing as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:
 - i) Limiting Conditions for Operation Section 3.4.9, "RCS Pressure and Temperature (P/T) Limits"
 - ii) Surveillance Requirements Section 3.4.9, "RCS Pressure and Temperature (P/T) Limits"
- b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following document:

5.6 Reporting Requirements

5.6.7 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE
LIMITS REPORT (PTLR) (continued)

- i) SIR-05-044-A, "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors," Revision 1, dated June 2013.
 - c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.
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5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

- 5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation
- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
 - b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
 - c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
 - d. Each individual or group entering such an area shall possess:
 1. A radiation monitoring device that continuously displays radiation dose rates in the area; or
 2. A radiation monitoring device that continuously transmits dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or
 4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and, (continued)
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5.7 High Radiation Area (continued)

- (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
 - 1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.
 - 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

(continued)

5.7 High Radiation Area (continued)

- b. Access to, and activities in, each area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 - 1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached with an appropriate alarm setpoint, or
 - 2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
 - 3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
 - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, or personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

(continued)

5.7 High Radiation Area (continued)

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the “As Low As is Reasonably Achievable” principle, a radiation monitoring device that continuously displays radiation dose rates in the area.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.
- f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible light shall be activated at the area as a warning device.

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ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES (MARK-UP)

B 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

BASES

LCOs LCO 3.0.1 through LCO 3.0.9 establish the general requirements applicable to all Specifications in Sections 3.1 through 3.10 and apply at all times, unless otherwise stated. †

LCO 3.0.1 LCO 3.0.1 establishes the Applicability statement within each individual Specification as the requirement for when the LCO is required to be met (i.e., when the unit is in the ~~MODES~~ or other specified conditions of the Applicability statement of each Specification).

LCO 3.0.2 LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that an ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. ~~This Specification establishes that:~~

- a. Completion of the Required Actions within the specified Completion Times constitutes compliance with a Specification; ~~and~~
- b. ~~Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified.~~

~~There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the LCO must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Action is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the Specification is not applicable. (Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS.) The second type of Required Action~~

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(continued)

BASES

~~LCO 3.0.2~~
(continued)

~~specifies the remedial measures that permit continued operation of the unit that is not further restricted by the Completion Time. In this case, compliance with the Required Actions provides an acceptable level of safety for continued operation.~~

~~Completing the Required Actions is not required when an LCO is met or is no longer applicable, unless otherwise stated in the individual Specifications.~~

~~The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Condition no longer exists. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.9, "RCS Pressure and Temperature (P/T) Limits."~~

~~The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. Additionally, if intentional entry into ACTIONS would result in redundant equipment being inoperable, alternatives should be used instead. Doing so limits the time both subsystems/divisions of a safety function are inoperable and limits the time conditions exist which may result in LCO 3.0.3 being entered. Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.~~

~~When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable and the ACTIONS Condition(s) are entered.~~

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(continued)

BASES (continued)

Deleted.

LCO 3.0.3

~~LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and:~~

- ~~a. An associated Required Action and Completion Time is not met and no other Condition applies; or~~
- ~~b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.~~

~~This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. It is not intended to be used as an operational convenience that permits routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.~~

~~Upon entering LCO 3.0.3, 1 hour is allowed to prepare for an orderly shutdown before initiating a change in unit operation. This includes time to permit the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. The time limits specified to reach lower MODES of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, Completion Times.~~

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(continued)

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BASES

~~LCO 3.0.3~~
(continued)

~~A unit shutdown required in accordance with LCO 3.0.3 may be terminated and LCO 3.0.3 exited if any of the following occurs:~~

- ~~a. The LCO is now met.~~
- ~~b. A Condition exists for which the Required Actions have now been performed.~~
- ~~c. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.~~

~~The time limits of Specification 3.0.3 allow 37 hours for the unit to be in MODE 4 when a shutdown is required during MODE 1 operation. If the unit is in a lower MODE of operation when a shutdown is required, the time limit for reaching the next lower MODE applies. If a lower MODE is reached in less time than allowed, however, the total allowable time to reach MODE 4, or other applicable MODE, is not reduced. For example, if MODE 2 is reached in 2 hours, then the time allowed for reaching MODE 3 is the next 11 hours, because the total time for reaching MODE 3 is not reduced from the allowable limit of 13 hours. Therefore, if remedial measures are completed that would permit a return to MODE 1, a penalty is not incurred by having to reach a lower MODE of operation in less than the total time allowed.~~

~~In MODES 1, 2, and 3, LCO 3.0.3 provides actions for Conditions not covered in other Specifications. The requirements of LCO 3.0.3 do not apply in MODES 4 and 5 because the unit is already in the most restrictive Condition required by LCO 3.0.3. The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.~~

~~Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.8, "Spent Fuel Storage Pool Water Level." LCO 3.7.8 has an Applicability of "During movement of irradiated fuel assemblies in the spent fuel~~

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(continued)

BASES

~~LCO 3.0.3
(continued)~~

~~storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.8 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.8 of "Suspend movement of irradiated fuel assemblies in the spent fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.~~

LCO 3.0.4

Deleted.

~~LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It allows placing the unit in a MODE or other specified condition stated in that 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.~~

~~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 Required Actions that permit continued operation of the unit 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 unit before or after the 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 Required Actions.~~

~~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~~

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(continued)

BASES

~~LCO 3.0.4
(continued)~~

~~10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities be assessed and managed. The risk assessment, for the purposes of LCO 3.0.4.b, must take into account all inoperable Technical Specification 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 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses Revision 4A of NUMARC 93-01 dated April 2011, "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 ACTIONS Completion Times 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 Technical Specifications allow continued operation with equipment unavailable in MODE 1 for the duration of the Completion Time. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk of transitioning into the 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~~

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(continued)

BASES

~~LCO 3.0.4
(continued)~~

~~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 systems and components contain Notes prohibiting the use of LCO 3.0.4.b by stating that LCO 3.0.4.b is not applicable.~~

~~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., Reactor Coolant System Specific 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 LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 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 or MODE 3, MODE 2 to MODE 3, and MODE 3 to MODE 4.~~

~~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.~~

BASES

~~LCO 3.0.4~~
(continued)

~~Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, utilizing LCO 3.0.4 is not a violation of SR 3.0.1 or SR 3.0.4 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.~~

LCO 3.0.5

Deleted.

~~LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of required testing to demonstrate:~~

- ~~a. The OPERABILITY of the equipment being returned to service; or~~
- ~~b. The OPERABILITY of other equipment.~~

~~The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. This Specification does not provide time to perform any other preventive or corrective maintenance.~~

~~An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the required testing.~~

~~An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of required testing on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of required testing on another channel in the same trip system.~~

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(continued)

BASES

LCO 3.0.6

Deleted.

~~LCO 3.0.6 establishes an exception to LCO 3.0.2 for support systems that have an LCO specified in the Technical Specifications (TS). This exception is provided because LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the actions that are required to ensure the plant is maintained in a safe condition are specified in the support system LCO's Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.~~

~~When a support system is inoperable and there is an LCO specified for it in the TS, the supported system(s) are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability.~~

~~However, it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions. The potential confusion and inconsistency of requirements related to the entry into multiple support and supported systems' LCOs' Conditions and Required Actions are eliminated by providing all the actions that are necessary to ensure the plant is maintained in a safe condition in the support system's Required Actions.~~

~~However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.~~

~~Specification 5.5.11, "Safety Function Determination Program (SFDP)," ensures loss of safety function is detected and appropriate actions are taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other limitations, remedial actions, or~~

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BASES

~~LCO 3.0.6
(continued)~~

~~compensatory actions may be identified as a result of the support system inoperability and corresponding exception to entering supported system Conditions and Required Actions. The SFDR implements the requirements of LCO 3.0.6.~~

~~Cross division checks to identify a loss of safety function for those support systems that support safety systems are required. The cross division check verifies that the supported systems of the redundant OPERABLE support system are OPERABLE, thereby ensuring safety function is retained.~~

~~A loss of safety function may exist when a support system is inoperable, and:~~

- ~~A. A required system redundant to system(c) supported by the inoperable support system is also inoperable; or (EXAMPLE B3.0.6-1)~~
- ~~B. A required system redundant to system(c) in turn supported by the inoperable supported system is also inoperable; or (EXAMPLE B3.0.6-2)~~
- ~~C. A required system redundant to support system(c) for the supported systems (a) and (b) above is also inoperable. (EXAMPLE B3.0.6-3)~~

~~EXAMPLE B3.0.6-1~~

~~If System 2 of Train A is inoperable, and System 5 of Train B is operable, a loss of safety function exists in supported System 5.~~

~~EXAMPLE B3.0.6-2~~

~~If System 2 of Train A is inoperable, and System 11 of Train B is inoperable, a loss of safety function exists in System 11 which is in turn supported by System 5.~~

~~EXAMPLE B3.0.6-3~~

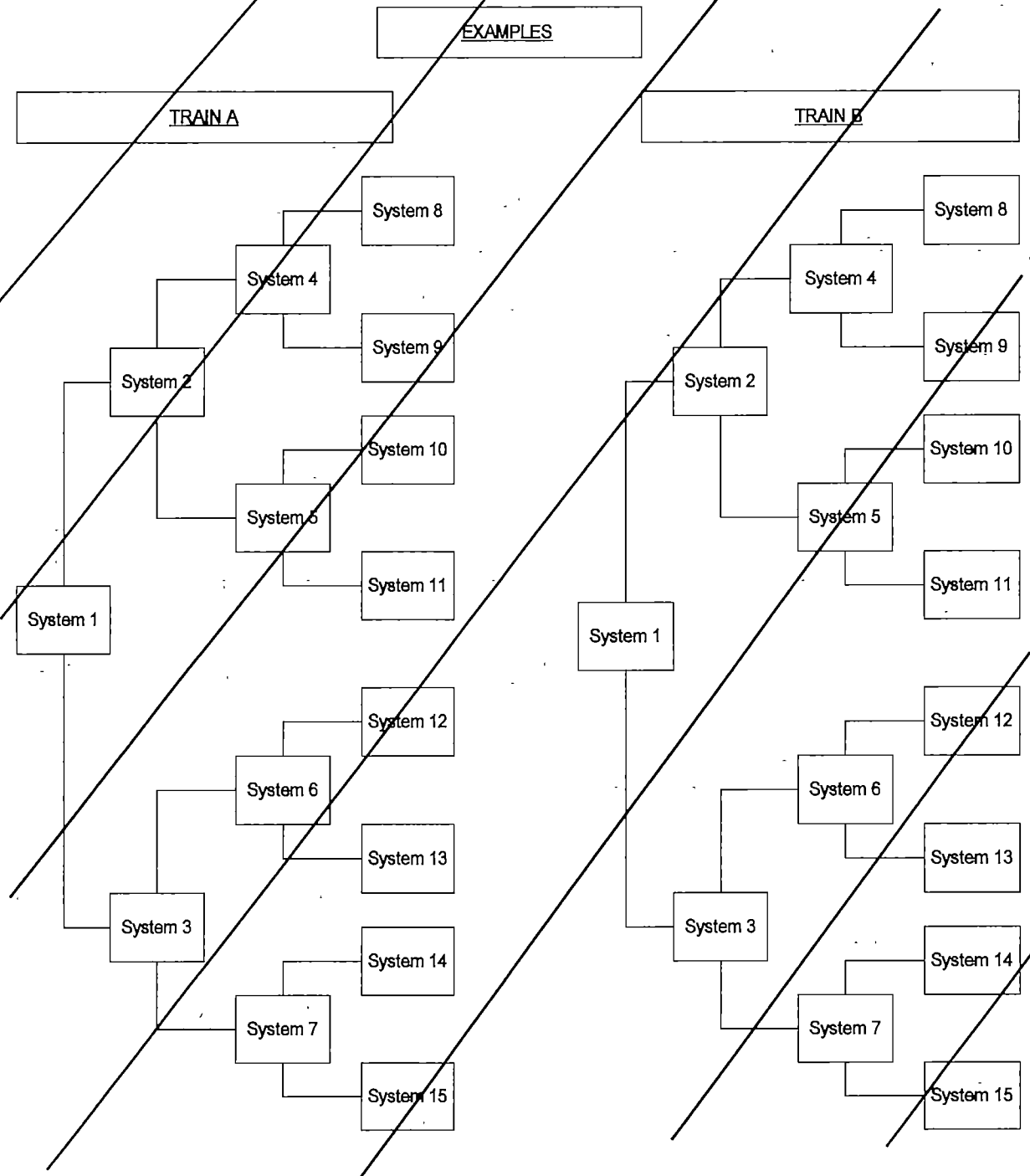
~~If System 2 of Train A is inoperable, and System 1 of Train B is inoperable, a loss of safety function exists in Systems 2, 4, 5, 8, 9, 10, and 11.~~

~~If this evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.~~

(continued)

BASES

LCO 3.0.6
(continued)



BASES

LCO 3.0.6
(continued)

~~This loss of safety function does not require the assumption of additional single failures or loss of offsite power. Since operation is being restricted in accordance with the ACTIONS of the support system, any resulting temporary loss of redundancy or single failure protection is taken into account. Similarly, the ACTIONS for inoperable offsite circuit(s) and inoperable diesel generator(s) provide the necessary restriction for cross train inoperabilities. This explicit cross train verification for inoperable AC electrical power sources also acknowledges that supported system(s) are not declared inoperable solely as a result of inoperability of a normal or emergency electrical power source (refer to the definition of OPERABILITY).~~

~~When a loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately addresses the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the supported system.~~

LCO 3.0.7

Deleted.

~~There are certain special tests and operations required to be performed at various times over the life of the unit. These special tests and operations are necessary to demonstrate select unit performance characteristics, to perform special maintenance activities, and to perform special evolutions. Special Operations LCOs in Section 3.10 allow specified TS requirements to be changed to permit performances of these special tests and operations, which otherwise could not be performed if required to comply with the requirements of these TS. Unless otherwise specified, all the other TS requirements remain unchanged. This will ensure all appropriate requirements of the MODE or other specified condition not directly associated with or required to perform the special test or operation will remain in effect.~~

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BASES

LCO 3.0.7
(continued)

~~The Applicability of a Special Operations LCO represents a condition not necessarily in compliance with the normal requirements of the TS. Compliance with Special Operations LCOs is optional. A special operation may be performed either under the provisions of the appropriate Special Operations LCO or under the other applicable TS requirements. If it is desired to perform the special operation under the provisions of the Special Operations LCO, the requirements of the Special Operations LCO shall be followed. When a Special Operations LCO requires another LCO to be met, only the requirements of the LCO statement are required to be met regardless of that LCO's Applicability (i.e., should the requirements of this other LCO not be met, the ACTIONS of the Special Operations LCO apply, not the ACTIONS of the other LCO). However, there are instances where the Special Operations LCO's ACTIONS may direct the other LCO's ACTIONS be met. The Surveillances of the other LCO are not required to be met, unless specified in the Special Operations LCO. If conditions exist such that the Applicability of any other LCO is met, all the other LCO's requirements (ACTIONS and SRs) are required to be met concurrent with the requirements of the Special Operations LCO.~~

LCO 3.0.8

Deleted.

~~LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36(e)(2)(ii), and, as such, are appropriate for control by the licensee.~~

~~If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.~~

BASES

LCO 3.0.8

~~LCO 3.0.8.a applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 3.0.8.a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.~~

~~LCO 3.0.8.b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system. LCO 3.0.8.b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.~~

~~LCO 3.0.8 requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 3.0.8 should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.~~

LCO 3.0.9
(continued)

~~LCO 3.0.9 establishes conditions under which systems described in the Technical Specifications are considered to remain OPERABLE when required barriers are not capable of providing their related support function(s).~~

Deleted.

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BASES

LCO 3.0.9
(continued)

~~Barriers are doors, walls, floor plugs, curbs, hatches, installed structures or components, or other devices, not explicitly described in Technical Specifications, that support the performance of the safety function of systems described in the Technical Specifications. This LCO states that the supported system is not considered to be inoperable solely due to required barriers not capable of performing their related support function(s) under the described conditions. LCO 3.0.9 allows 30 days before declaring the supported system(s) inoperable and the LCO(s) associated with the supported system(s) not met. A maximum time is placed on each use of this allowance to ensure that as required barriers are found or are otherwise made unavailable, they are restored. However, the allowable duration may be less than the specified maximum time based on the risk assessment.~~

~~If the allowed time expires and the barriers are unable to perform their related support function(s), the supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.~~

~~This provision does not apply to barriers which support ventilation systems or to fire barriers. The Technical Specifications for ventilation systems provide specific Conditions for inoperable barriers. Fire barriers are addressed by other regulatory requirements and associated plant programs. This provision does not apply to barriers which are not required to support system OPERABILITY (see NRC Regulatory Issue Summary 2001-09, "Control of Hazard Barriers," dated April 2, 2001).~~

~~The provisions of LCO 3.0.9 are justified because of the low risk associated with required barriers not being capable of performing their related support function. This provision is based on consideration of the following initiating event categories:~~

- ~~• Loss of coolant accidents;~~
- ~~• High energy line breaks;~~
- ~~• Feedwater line breaks;~~
- ~~• Internal flooding;~~
- ~~• External flooding;~~
- ~~• Turbine missile ejection; and~~
- ~~• Tornado or high wind.~~

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BASES

LCO 3.0.9
(continued)

~~The risk impact of the barriers which cannot perform their related support function(s) must be addressed pursuant to the risk assessment and management provision of the Maintenance Rule, 10 CFR 50.65 (a)(4), and the associated implementation guidance, Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Regulatory Guide 1.160 endorses Revision 4A of NUMARC 03-01 dated April 2011, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This guidance provides for the consideration of dynamic plant configuration issues, emergent conditions, and other aspects pertinent to plant operation with the barriers unable to perform their related support function(s). These considerations may result in risk management and other compensatory actions being required during the period that barriers are unable to perform their related support function(s).~~

~~LCO 3.0.9 may be applied to one or more trains or subsystems of a system supported by barriers that cannot provide their related support function(s), provided that risk is assessed and managed (including consideration of the effects on Large Early Release and from external events). If applied concurrently to more than one train or subsystem of a multiple train or subsystem supported system, the barriers supporting each of these trains or subsystems must provide their related support function(s) for different categories of initiating events. For example, LCO 3.0.9 may be applied for up to 30 days for more than one train of a multiple train supported system if the affected barrier for one train protects against internal flooding and the affected barrier for the other train protects against tornado missiles. In this example, the affected barrier may be the same physical barrier but serve different protection functions for each train.~~

~~The HPCI (High Pressure Coolant Injection) and RCIC (Reactor Core Isolation Cooling) systems are single train systems for injecting makeup water into the reactor during an accident or transient event. The RCIC system is not a safety system, nor required to operate during a transient, therefore, it does not have to meet the single failure criterion. The HPCI system provides backup in case of a RCIC system failure. The ADS (Automatic Depressurization System) and low pressure EGCS coolant injection provide the core cooling function in the event of failure of the HPCI system during an accident. Thus, for the purposes of LCO 3.0.9, the HPCI system, the RCIC system, and the ADS are considered independent subsystems of a single system and LCO 3.0.9 can be used on these single train systems in a manner similar to multiple train or subsystem systems.~~

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BASES

~~LCO 3.0.9
(continued)~~

~~If during the time that LCO 3.0.9 is being used, the required OPERABLE train or subsystem becomes inoperable, it must be restored to OPERABLE status within 24 hours. Otherwise, the train(s) or subsystem(s) supported by barriers that cannot perform their related support function(s) must be declared inoperable and the associated LCOs declared not met. This 24 hour period provides time to respond to emergent conditions that would otherwise likely lead to entry into LCO 3.0.3 and a rapid plant shutdown, which is not justified given the low probability of an initiating event which would require the barrier(s) not capable of performing their related support function(s). During this 24 hour period, the plant risk associated with the existing conditions is assessed and managed in accordance with 10 CFR 50.65(a)(4).~~

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications in Sections 3.1 through 3.10 and apply at all times, unless otherwise stated.

SR 3.0.1 SR 3.0.1 establishes the requirement that SRs must be met during the ~~MODES or other~~ specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Surveillance may be performed by means of any series of sequential, overlapping, or total steps provided the entire Surveillance is performed within the specified Frequency. Additionally, the definitions related to instrument testing (e.g., CHANNEL CALIBRATION) specify that these tests are performed by means of any series of sequential, overlapping, or total steps.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when:

- a. The systems or components are known to be inoperable, although still meeting the SRs; or
- b. The requirements of the Surveillance(s) are known to be not met between required Surveillance performances.

Surveillances do not have to be performed when the ~~unit~~ ^{facility} is in a ~~MODE or other~~ specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. ~~The SRs associated with a Special Operations LCO are only applicable when the Special Operations LCO is used as an allowable exception to the requirements of a Specification.~~

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

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BASES

SR 3.0.1
(continued)

facility

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with SR 3.0.2. Post maintenance testing may not be possible in the current ~~MODE or other~~ specified conditions in the Applicability due to the necessary ~~unit~~ parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a ~~MODE or other~~ specified condition where other necessary post maintenance tests can be completed.

~~Some examples of this process are:~~

- ~~a. Control Rod Drive maintenance during refueling that requires scram testing at > 800 psi. However, if other appropriate testing is satisfactorily completed, the control rod can be considered OPERABLE. This allows startup to proceed to reach 800 psi to perform other necessary testing.~~
- ~~b. High pressure coolant injection (HPCI) maintenance during shutdown that requires system functional tests at a specified pressure. Provided other appropriate testing is satisfactorily completed, startup can proceed with HPCI considered OPERABLE. This allows operation to reach the specified pressure to complete the necessary post maintenance testing.~~

SR 3.0.2

~~SR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per..." interval.~~

facility

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers ~~plant operating~~ conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities).

BASES

SR 3.0.2
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The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the SRs. ~~The exceptions to SR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual Specifications. The requirements of regulations take precedence over the TS. Therefore, when a test interval is specified in the regulations, the test interval cannot be extended by TS, and the SR includes a Note in the Frequency stating, "SR 3.0.2 is not applicable."~~

~~As stated in SR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per..." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.~~

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals ~~(other than those consistent with refueling intervals)~~ or periodic Completion Time intervals beyond those specified.

SR 3.0.3

SR 3.0.3 establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is greater, applies from the point in time that it is discovered that the Surveillance has not been performed in accordance with SR 3.0.2, and not at the time that the specified Frequency was not met.

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BASES

SR 3.0.3
(continued)

This delay period provides adequate time to complete Surveillances that have been missed. This delay period permits the completion of a Surveillance before complying with Required Actions or other remedial measures that might preclude completion of the Surveillance.

facility

The basis for this delay period includes consideration of ~~unit~~ conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the requirements.

~~When a Surveillance with a Frequency based not on time intervals, but upon specified unit conditions, operating situations, or requirements of regulations (e.g., prior to entering MODE 1 after each fuel loading, or in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, etc.) is discovered to not have been performed when specified, SR 3.0.3 allows for the full delay period of up to the specified Frequency to perform the Surveillance. However, since there is not a time interval specified, the missed Surveillance should be performed at the first reasonable opportunity. SR 3.0.3 provides a time limit for, and allowances for the performance of, Surveillances that become applicable as a consequence of MODE changes imposed by Required Actions.~~

Failure to comply with specified Frequencies for SRs is expected to be an infrequent occurrence. Use of the delay period established by SR 3.0.3 is a flexibility which is not intended to be used as an operational convenience to extend Surveillance intervals. While up to 24 hours or the limit of the specified Frequency is provided to perform the missed Surveillance, it is expected that the missed Surveillance will be performed at the first reasonable opportunity. The determination of the first reasonable opportunity should include consideration of the impact on ~~plant~~ risk (from delaying the Surveillance as well as any ~~plant~~ configuraton changes required or shutting the plant down to perform the Surveillance) and impact on any analysis assumptions, in addition to ~~unit~~ conditions, planning, availability of

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BASES

SR 3.0.3
(continued)

personnel, and the time required to perform the Surveillance. This 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 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This Regulatory Guide addresses consideration of temporary and aggregate risk impacts, determination of risk management action thresholds, and risk management action up to and including plant shutdown. The missed Surveillance should be treated as an emergent condition, as discussed in the Regulatory Guide. The risk evaluation may use quantitative, qualitative, or blended methods. The degree of depth and rigor of the evaluation should be commensurate with the importance of the component. Missed Surveillances for important components should be analyzed quantitatively. If the results of the risk evaluation determine the risk increase is significant, this evaluation should be used to determine the safest course of action. All missed Surveillances will be placed in the Corrective Action Program.

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 Completion Times of the Required Actions for the applicable LCO Conditions 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 Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a ~~MODE or other~~ specified condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into ~~MODES or other~~ specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

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maintenance

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BASES

SR 3.0.4
(continued)

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 3.0.4 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 3.0.1, which states that Surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 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 3.0.4 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 3.0.4 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 3.0.3~~

The provisions of SR 3.0.4 shall not prevent changes in ~~MODES or other~~ specified conditions in the Applicability that are required to comply with ACTIONS. ~~In addition, the provisions of SR 3.0.4 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 or MODE 3, MODE 2 to MODE 3, and MODE 3 to MODE 4.~~

BASES

SR 3.0.4
(continued)

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 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. Further discussion of the specific formats of SRs' annotation is found in Section 1.4, Frequency.

B 3.7 PLANT SYSTEMS

B 3.7.8 Spent Fuel Storage Pool Water Level

BASES

BACKGROUND

The minimum water level in the spent fuel storage pool meets the assumptions of iodine decontamination factors following a fuel handling accident.

A general description of the spent fuel storage pool design is found in the UFSAR, Section 9.1.2 (Ref. 1). The assumptions of the fuel handling accident are found in the UFSAR, Section 15.2.5 (Ref. 2).

APPLICABLE
SAFETY
ANALYSES

The water level above the irradiated fuel assemblies is an explicit assumption of the fuel handling accident. A fuel handling accident is evaluated to ensure that the radiological consequences (calculated whole body and thyroid doses at the exclusion area and low population zone boundaries) are well below the guideline limits of 10 CFR 50.67 (Ref. 3) and meet the exposure guidelines of Regulatory Guide 1.183 (Ref. 4). A fuel handling accident could release a fraction of the fission product inventory by breaching the fuel rod cladding as discussed in UFSAR, Section 15.2.5 (Ref. 2).

The fuel handling accident is evaluated for the dropping of an irradiated fuel assembly onto the reactor core. The consequences of a fuel handling accident over the spent fuel storage pool are no more severe than those of the fuel handling accident over the reactor core, as discussed in the UFSAR, Section 15.2.5 (Ref. 2). The water level in the spent fuel storage pool provides for absorption of water soluble fission product gases and transport delays of soluble and insoluble gases that must pass through the water before being released to the secondary containment atmosphere. This absorption and transport delay reduces the potential radioactivity of the release during a fuel handling accident.

The spent fuel storage pool water level satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

An analysis of a fuel handling accident in the spent fuel storage pool has also been performed.

BASES (continued)

LCO The specified water level preserves the assumptions of the fuel handling accident analysis (Ref. 2). As such, it is the minimum required for fuel movement within the spent fuel storage pool.

APPLICABILITY This LCO applies during movement of irradiated fuel assemblies in the spent fuel storage pool since the potential for a release of fission products exists.

ACTIONS A.1

~~LCO 3.0.3 is not applicable in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not a sufficient reason to require a reactor shutdown.~~

When the initial conditions for an accident cannot be met, action must be taken to preclude the accident from occurring. If the spent fuel storage pool level is less than required, the movement of irradiated fuel assemblies in the spent fuel storage pool is suspended immediately. Suspension of this activity shall not preclude completion of movement of an irradiated fuel assembly to a safe position. This effectively precludes a spent fuel handling accident from occurring.

SURVEILLANCE SR 3.7.8.1
REQUIREMENTS

This SR verifies that sufficient water is available in the event of a fuel handling accident. The water level in the spent fuel storage pool must be checked periodically. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The Frequency is acceptable, based on operating experience, considering that the water volume in the pool is normally stable, and all water level changes are controlled by unit procedures.

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BASES (continued)

- REFERENCES
1. UFSAR, Section 9.1.2.
 2. UFSAR, Section 15.2.5.
 3. 10 CFR 50.67.
 4. Regulatory Guide 1.183.
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