Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

October 23, 2007
NOC-AE-07002218
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
License Amendment Request
Proposed Revision to Technical Specifications to Relocate Surveillance Test Intervals
to a Licensee-Controlled Program (Risk-Informed Initiative 5b)

In accordance with the provisions of 10 CFR 50.90, STP Nuclear Operating Company (STPNOC) is submitting a request for an amendment to the Technical Specifications (TS) for South Texas Project Operating Licenses NPF-76 and NPF-80.

The proposed amendment will implement TSTF-425, Rev. 0, which relocates the surveillance test intervals (STIs) of various TS surveillance requirements from the TS to a licensee program controlled in accordance with the Surveillance Frequency Control Program, a new program which is being added to the Administrative Controls section of the TS.

The Enclosure provides a technical and regulatory evaluation of the changes. Proposed TS page markups are included as attachments to the Enclosure.

STPNOC requests approval by September 30, 2008.

STPNOC requests 60 day for implementation of the amendment after it is approved.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

The STPNOC Plant Operations Review Committee has reviewed and concurred with the proposed change to the Technical Specifications.

STI: 32213891

A001

NRR

There are no commitments in this submittal.

If there are any questions regarding the proposed amendment, please contact Mr. Scott Head at (361) 972-7136 or me at (361) 972-7454.

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

Executed on October 23, 2007.
Date

Charles T. Bowman

Charles T. Bowman
General Manager, Oversight

tck/

Enclosure: Evaluation of the Proposed Change cc:

(paper copy)

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ENCLOSURE

Evaluation of the Proposed Change

Subject: Application for License Amendment to Relocate Surveillance Test Intervals to a Licensee-Controlled Program (Risk-Informed Initiative 5(b))

ATTACHMENTS:
1. Technical Specification Page Markups
2. Technical Specification Bases Page Markups

ENCLOSURE

1.0 SUMMARY DESCRIPTION

The proposed amendment would implement TSTF-425 Rev. 0, which relocates the surveillance frequencies, also known as surveillance test intervals (STIs), of various Technical Specification (TS) surveillance requirements (SRs) from the TS to a licensee-controlled document. The relocated STIs would be controlled in accordance with the requirements stipulated in a new program, the Surveillance Frequency Control Program (SFCP), which is being added to the Administrative Controls Section of the TS. The only differences between the TSTF and this submittal are discussed in sections 3 and 4. Attachment 1 provides the markups for the TS pages. Attachment 2 provides the markups for the TS Bases pages.

The Nuclear Energy Institute (NEI) developed a risk-informed methodology, documented in NEI 04-10, Risk-Informed Method for Control of Surveillance Frequencies, Rev. 0, July 2006, (Reference 6.4), which provides a method to evaluate and revise STIs, where appropriate, within the SFCP. This methodology document was reviewed and approved by the NRC, (Reference 6.2), on September 28, 2006. Subsequently, on April 19, 2007, NEI submitted TR NEI 04-10, "Risk-Informed Technical Specification Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies", Revision 1. The main purpose of this revision was the addition of guidance relative to the modeling and consideration of test strategies (staggered versus sequential). NEI 04-10, Revision 1 was reviewed and approved by the NRC, (Reference 6.14) and will be referenced in the SFCP and incorporated by reference into the Administrative Controls Section of the TS.

Individual STIs will not be revised as part of this license amendment request (LAR). However, once this LAR is approved by the NRC, future changes to the STIs will be evaluated in accordance with the SFCP, and the STIs may be revised, as appropriate, based on the evaluation results without prior NRC approval.

Various TS surveillance requirements, including in some cases their associated STIs, were established based on commitments to Regulatory Guides, or based on implementation of NRC-approved Licensing Topical Reports. The surveillance requirements themselves will not be relocated to the SFCP and will continue to be performed in accordance with the applicable Regulatory Guide or Topical Report, as appropriate; however, associated STIs that have been relocated to the SFCP may be modified in accordance with the SFCP. In cases where the associated STIs were established based on commitments documented in the plant's safety analysis, the guidance provide in NEI 04-10 will be used to determine if the STIs are eligible for modification.

2.0 DETAILED DESCRIPTION

This proposed change will result in the following:

1. Revised Index, as appropriate, to reflect the TS changes proposed below.

2. Replace various STIs specified within Technical Specification (TS) individual surveillance requirements (SR) with a reference to the licensee-controlled program, e.g., with the words "in accordance with the Surveillance Frequency Control Program." The proposed change applies primarily to SRs that are performed on a fixed periodicity. Existing STIs that are not proposed to be relocated as part of this request are associated with SRs that:

   a. Have no time component but are purely event-driven, e.g., "prior to thermal power exceeding 85% of rated thermal power"; or

   b. Are event-driven but have a time component for performing the surveillance on a one-time basis once the event occurs, e.g., "within 12 hours after completion of a thermal power increase of at least 15% of rated thermal power"; or

   c. Reference an already established and approved licensee program rather than a specific interval, e.g., surveillance requirements that refer to Specification 4.0.5 (the Inservice Testing Program), or the Primary Containment Leakage Rate Testing Program.

3. Add a new TS Section 6.8.3.q, "Surveillance Frequency Control Program," which will describe the basic means for licensee control of surveillance frequencies within the licensee-controlled program and includes the following requirements:

   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,

      STP takes the following exception to NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1:

      1. STP will use the Independent Decisionmaking Panel licensed to support the Graded Quality Assurance Program and the Exemption from Certain Special Treatment Requirements, augmented by the Surveillance Test Coordinator and Subject Matter Expert(s), to perform the IDP function.

   c. the provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

4. Revise the TS Bases, as appropriate, relative to the proposed TS changes described above.

3.0 TECHNICAL EVALUATION

With the exception that the STPNOC LAR includes staggered test bases, the changes requested by this amendment are programmatically equivalent to those granted by the NRC for the Limerick Generating Station on September 28, 2006, (Reference 6.1). These changes allowed the relocation of surveillance frequencies, also known as surveillance test intervals (STIs), of various technical specifications (TS) surveillance requirements (SRs) from the TSs to a licensee-controlled document, which would be controlled in accordance with the requirements stipulated in a new program, the Surveillance Frequency Control Program (SFCP) in the Administrative Controls Section of the TSs.

NEI 04-10, Rev. 1, recognizes testing strategies (staggered versus sequential) are part of the surveillance frequency and therefore eligible for relocation. Therefore, NEI 04-10, Rev. 1 allows the relocation of the phrase "on a Staggered Test Basis", as a part of the STI, to the SFCP. NEI 04-10, Rev. 1 also contains information to address how surveillances which are performed on a staggered test basis are modeled in the risk assessment performed to support a change to the frequency.

Relocation of the STIs from the TS to a licensee-controlled program does not affect the plant design, hardware, or system operation and will not affect the ability of the plant to perform its design function in mitigating the consequences of a postulated design basis accident. The SFCP program will control changes to the relocated STIs and ensure the surveillance requirements specified in the TS are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met. The program contains the following requirements:

- the Surveillance Frequency Control Program shall contain a list of frequencies of those surveillance requirements for which the frequency is controlled by the program,

- changes to the frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI-04-10, Revision 1 (Ref. 6.13)

  STP takes the following exception to NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1:

  a. STP will use the Independent Decisionmaking Panel licensed to support the Graded Quality Assurance Program and the Exemption from Certain Special Treatment Requirements, augmented by the Surveillance Test Coordinator and Subject Matter Expert(s), to perform the IDP function.

- the provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

NEI 04-10 provides the detailed process requirements for controlling surveillance frequencies of the TS surveillance requirements that have been relocated from the TS to the SFCP. The methodology described in NEI 04-10 provides a risk-informed process to support a plant expert panel assessment of proposed changes to surveillance frequencies, assuring appropriate consideration of risk insights and other deterministic factors which may impact surveillance frequencies, along with appropriate performance monitoring of changes and documentation requirements.

NEI 04-10 includes a description of the expected makeup of the IDP. This description states the IDP will be comprised of the Maintenance Rule Expert Panel, the Surveillance Test Coordinator and a Subject Matter Expert who is the cognizant system manager or component engineer

The exception being proposed by STP will allow the use of a long standing independent decision making panel of highly qualified individuals with extensive experience in risk informed evaluations to determine the acceptability of the proposed STI change, in lieu of the site Maintenance Rule Expert Panel. This group, which was developed to implement the Graded Quality Assurance Program and the Exemption from Certain Special Treatment Requirements process and has been reviewed and approved by the NRC staff, (References 6.5 & 6.6), is comprised of individuals whose experience is equal to or exceeds the requirements of those on the Maintenance Rule Expert Panel. The individuals who make up this panel are designated by the senior management team that provides process oversight. The designated individuals have expertise in the areas of probabilistic risk assessment, operations, maintenance, engineering, quality assurance, operating experience, and licensing, including at least three individuals with a minimum of five years experience at STP or similar nuclear plants, and at least one individual who has worked on the modeling and updating of the PRA for STP or similar plants for a minimum of three years. This level of experience and expertise will ensure the final decision is well-considered and safety-focused. When reviewing potential STI changes, the panel will be augmented by the Surveillance Test Coordinator and at least one subject matter expert. STPNOC has concluded the use of this panel is not a significant deviation from NEI 04-10.

The NRC issued a Final Safety Evaluation for NEI 04-10 Rev. 1, "Risk-Informed Method for Control of Surveillance Frequencies", on September 19, 2007, (Reference 6.13). The Staff found that NEI 04-10, Rev. 1, was acceptable for referencing by licensees proposing to amend their TS to establish an SFCP, provided that the following conditions are satisfied:

1. The licensee submits documentation with regard to PRA technical adequacy consistent with the requirements of RG 1.200, (Reference 6.15), Section 4.2.

2. When a licensee proposes to use PRA models for which NRC-endorsed standards do not exist, the licensee submits documentation which identifies the quality characteristics of those models, consistent with RG 1.200, Sections 1.2 and 1.3. Otherwise, the licensee identifies and justifies the methods to be applied for assessing the risk contribution for those sources of risk not addressed by PRA models.

On July 13, 2007 the NRC staff approved Amendments 179 and 166 to the Facility Operating License for South Texas Project (STP) Units 1 and 2 (Reference 6.3). These amendments granted STP the ability to implement a Risk Informed Completion Time (RICT) for a large number of TS. As part of the review for these amendments, the NRC staff performed an extensive review of STP's PRA. The staff determined that the STP PRA internal events model satisfied the guidance of RG 1.200, Revision 1, conformed to capability category II of the ASME standard for the supporting requirements, and that the STP PRA external events models satisfy RG 1.200, Revision 1, guidance for the implementation of RICT. In addition, the STP PRA was considered by the NRC to be technically acceptable in support of the NRC approved Graded Quality Assurance Program and the Exemption from Certain Special Treatment Requirements. STP currently does not have a shutdown PRA, therefore, proposed STI changes will be evaluated using the NEI 04-10 guidance for shutdown safety impacts.

STP has performed several simulated STI evaluations to verify that the NEI 04-10 process can be properly implemented. In all cases, the process functioned as expected. STPNOC believes that the PRA submittals made in support of the Initiative 4b application and the associated NRC SER provide adequate documentation of the STP PRA quality and satisfy the PRA conditions noted in the above NEI safety evaluation. (References 6.7 thru 6.12)

STP has reviewed the Request for Additional Information (RAIs) for TSTF 425 Rev. 1, found in the Staff's letter to the Technical Specification Task Force (TSTF), dated October 2, 2007. STP believes this submittal complies with the Staff's positions stated the in the RAIs. (Reference 6.16)

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) SRs; (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TSs. As stated in 10 CFR 50.36(c)(3), "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

Certain General Design Criteria (GDC) in 10 CFR 50 Appendix A requires that systems be testable. In particular, GDC 17, "Electric power systems," requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components (SSCs) that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. GDC-18, "Inspection and testing of electric power systems," requires that electric power systems that are important to safety shall be designed to permit appropriate periodic inspection and testing to assess the continuity of the systems and the condition of their components. In addition, in some cases industry codes and standards recommend frequencies for the performance of surveillances, which should be considered in the determination of STIs. The SFCP shall ensure that SRs specified in the TSs are performed at intervals sufficient to assure the above NRC regulatory requirements are met. Existing regulatory requirements, such as 10 CFR

50.65 (requirements for monitoring the effectiveness of maintenance at nuclear power plants) and 10 CFR Part 50, Appendix B (Quality Assurance Criteria), require monitoring of surveillance test failures and action be taken to address such failures. One of these actions may be to consider increasing the frequency at which the surveillance is performed. In addition, the SFCP implementation guidance NEI 04-10 requires monitoring of surveillance test performance for which surveillance frequencies are changed.

Changes to surveillance frequencies in the SFCP using NEI 04-10, including qualitative considerations, results of risk analyses, sensitivity studies, and any bounding analyses, and recommended monitoring of SSCs, are required to be documented. This documentation may be subject to regulatory review. In addition, the SFCP implementation will be subject to regulatory oversight.

These regulatory requirements, and the monitoring required by NEI 04-10, ensure that surveillance frequencies which are insufficient to assure the requirements of 10 CFR 50.36 are satisfied will be identified and appropriate corrective actions taken.

4.2 Precedent

The proposed change relocates the intervals for the performance of various surveillance requirements from the TS to a licensee-controlled program using an NRC approved methodology for control of the surveillance intervals once in the licensee program. The surveillance requirements themselves will remain in the TS. The In-Service Test Program (IST Program) for ASME components governed by TS 4.0.5 established a precedent for relocation of STIs to a licensee controlled program. In several instances, the STP TS do not specify a particular surveillance interval but rather state: "when tested pursuant to Specification 4.0.5." TS Section 4.0.5 references Section XI of the ASME Boiler and Pressure Vessel Code for the surveillance intervals. The surveillance intervals are based on the plant's Inservice Testing (IST) Program which implements the ASME Code. Within the IST program, the actual surveillance intervals vary based on the performance of the individual components. In another example of a precedent for STIs being determined by a licensee controlled program, the TS do not specify a particular surveillance interval for primary containment leakage rate testing, but instead require that the surveillance be performed "in accordance with the Primary Containment Leakage Rate Testing Program." The Primary Containment Leakage Rate Testing Program references 10 CFR 50, Appendix J, Option B, which allows performance-based testing. The testing interval varies based on the past performance of the subject components.

On September 28, 2006 the pilot application for the Risk-Informed Initiative 5b, Relocate Surveillance Test Intervals to Licensee-Controlled Program, was approved for Limerick Generation Station, Units 1 and 2 (TAC NOs. MC3567 AND MC3568). The program proposed by STP is administratively and technically equivalent to the program approved for Limerick with the following exceptions:

1. The Limerick submittal contained examples of the information provided to the IDP for review. Based on the previously reviewed and approved Graded Quality Assurance Program

and the Exemption from Certain Special Treatment Requirements the NRC Staff concluded STP will not need to submit examples of this information.

2. The Limerick submittal contained a section on the quality of the station PRA used to develop a risk recommendation for use by the IDP during approval deliberations. Based on the approval of the Risk Informed Completion Times (4b) for STP with the associated documentation of the STP PRA quality in that SER, the NRC Staff concluded STP will not need to submit a PRA quality document.

3. STP proposes to reference NEI 04-10, Revision 1, (Ref. 6.13) in the SFCP being added to the Program section of TS. This will allow the relocation of the phrase "on a Staggered Test Basis", along with the Surveillance Test Interval, to the SFCP.

4.3 Significant Hazards Consideration

STP has evaluated whether or not a significant hazards consideration is involved with the proposed amendments 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 change involves the relocation of various surveillance test intervals from Technical Specifications (TS) to a licensee-controlled program. The proposed change does not involve the modification of any plant equipment or affect basic plant operation. The proposed change will have no impact on the design or function of any safety related structures, systems or components. Surveillance test intervals are not assumed to be an initiator of any analyzed event, nor are they assumed in the mitigation of consequences of accidents. The surveillance requirements themselves will be maintained in the TS along with the applicable Limiting Conditions for Operation (LCOs) and Action statements. The surveillances performed at the intervals specified in the licensee-controlled program will assure that the affected system or component function is maintained, that the facility operation is within the Safety Limits, and that the LCOs are met.

   Therefore, the proposed change 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 change does not involve any physical alteration of plant equipment and does not change the method by which any safety-related structure, system, or component performs its function or is tested. As such, no new or different types of equipment will be installed, and the basic operation of installed equipment is unchanged.

The methods governing plant operation and testing remain consistent with current safety analysis assumptions.

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

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

Response: No. The proposed change does not negate any existing requirement, and does not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. As such, there are no changes being made to safety analysis assumptions, safety limits or safety system settings that would adversely affect plant safety as a result of the proposed change. Margins of safety are unaffected by relocation of the surveillance test intervals to a licensee-controlled program.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, STP concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), 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 CONSIDERATION

A review has determined that the proposed amendment 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 does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c) (9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement, or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

6.1 Letter from R. V. Guzman, Office of Nuclear Reactor Regulation, to C. M. Crane, Exelon Nuclear, dated September 28, 2006, "Relocate Surveillance Test Intervals to Licensee-Controlled Program", (ML062420047) (TAC NOS. MC3567 and MC3568).

6.2 Letter from H. Neih, Office of Nuclear Reactor Regulation, to A. Pietrangelo Nuclear Energy Institute, dated September 28, 2006, "Risk-Informed Technical Specifications Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies" (ML062700012) (TAC NOS. MB2531 and MD3077).

6.3 Letter from M. C. Thadani, Office of Nuclear Reactor Regulation, to J. J. Sheppard, STP Nuclear Operating Company, dated July 13, 2007, "Broad-Scope, Risk-Informed Technical Specifications Amendments", (ML071780191) (TAC NOS. MD2341and MD2342)

6.4 NEI 04-10, Risk-Informed Method for Control of Surveillance Frequencies, Revision 0, dated July 2006

6.5 Letter from J. Zwolinski, Office of Nuclear Reactor Regulation, to W. T. Cottle, STP Nuclear Operating Company, dated August 3, 2001, "STPNOC Exemption Request from Special Treatment Requirements of 10 CFR Parts 21, 50, and 100" (ML011990368) (TAC NOS. MA 6057and MA 6058)

6.6 Letter from T. W. Alexion, Office of Nuclear Reactor Regulation, to W. T. Cottle, STP Nuclear Operating Company, dated November 6, 1997 (TAC NOS. M92450 and M92451)

6.7 Letter from T. J. Jordan to NRC Document Control Desk dated October 28, 2004, "Technical Adequacy of the South Texas Project Probabilistic Risk Assessment" (ML 043070448, NOC-AE-04001813)

6.8 Letter from M. A. McBurnett to NRC Document Control Desk dated February 10, 2006, "Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Informed Technical Specifications" (ML060480439, NOC-AE-06001969)

6.9 Letter from M. A. McBurnett to NRC Document Control Desk dated April 26, 2006, "Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Informed Technical Specifications" (ML061280591, NOC-AE-06001994)

6.10 Letter from David W. Rencurrel to NRC Document Control Desk dated June 6, 2006, "Broad Scope Risk-Informed Technical Specification Amendment Request" (ML061630315, NOC-AE-06002005)

6.11 Letter from David W. Rencurrel to NRC Document Control Desk dated December 28, 2006, "Revised Broad Scope Risk-Informed Technical Specification Amendment Request" (ML070040247, NOC-AE-06002036 TAC Nos. MD 2341 & MD 2342)

6.12 Letter from Charles T. Bowman to NRC Document Control Desk dated February 28, 2007, "Response to NRC Requests for Additional Information on STPNOC Proposed Risk Managed Technical Specifications "(TAC Nos. MD 2341 & MD 2342) (NOC-AE-07002112)

6.13 NEI 04-10, Risk-Informed Method for Control of Surveillance Frequencies, Revision 1, dated April 2007

6.14 Letter from Ho K. Nieh, Office of Nuclear Reactor Regulation, to B. Bradley Nuclear Energy Institute, dated September 19, 2007 (ML072570267) (TAC NOS. MD6111).

6.15 Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," February 2004 (ML040630078).

6.16 Letter from T.J. Kobetz, Office of Nuclear Reactor Regulation, to Technical Specification Task Force, dated October 2, 2007 (ML072120630) (TAC No. MD5411).

ENCLOSURE, ATTACHMENT 1

TS Page Markups List of Effected Pages

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INSERTS FOR TECHNICAL SPECIFICATION CHANGES

INSERT 1

At a frequency in accordance with the Surveillance Frequency Control Program

INSERT 2

and at the frequency specified in the Surveillance Frequency Control Program unless otherwise noted in Table 4.3-1

INSERT 3

the frequency specified in the Surveillance Frequency Control Program

INSERT 4

Frequencies are specified in the Surveillance Frequency Control Program unless otherwise noted in the table.

INSERT 5

and at the frequency specified in the Surveillance Frequency Control Program unless otherwise noted in Table 4.3-2

INSERT 6

6.8.3.q 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.

1. The Surveillance Frequency Control Program shall contain a list of frequencies of those surveillance requirements for which the frequency is controlled by the program.

2. 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.

   STP takes the following exception to NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1:

   a. STP will use the Independent Decisionmaking Panel (IDP) described in the applications approved by the NRC for the Graded Quality Assurance Program and the Exemption from Certain Special Treatment Requirements, augmented by the Surveillance Test Coordinator and Subject Matter Expert(s), to perform the IDP function.

3. The provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be within the limits provided in the CORE OPERATING LIMITS REPORT (COLR).

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

ACTION:

With the SHUTDOWN MARGIN not within the limit initiate boration within 15 minutes and continue boration until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be within the limits specified in the COLR:

a. Within 1 hour after detection of an inoperable control rod(s) and ~~at least once per 12 hours thereafter~~ while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s);

INSERT 1

b. When in MODE 2 with K_{eff} less than 1, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.6;

c. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of Specification 4.1.1.1.1d. below, with the control banks at the maximum insertion limit of Specification 3.1.3.6; and

*See Special Test Exceptions Specification 3.10.1.

REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.4 The Reactor Coolant System lowest operating loop temperature (T_{avg}) shall be greater than or equal to 561°F.

APPLICABILITY: MODES 1 and 2* **.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{avg}) less than 561°F, restore T_{avg} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.4 The Reactor Coolant System temperature (T_{avg}) shall be determined to be greater than or equal to 561°F:

a. Within 15 minutes prior to achieving reactor criticality, and

INSERT 1

b. ~~At least once per 30 minutes~~ when the reactor is critical and the Reactor Coolant System T_{avg} is less than 571°F with the T_{avg}-T_{ref} Deviation Alarm not reset.

*With K_{eff} greater than or equal to 1.

**See Special Test Exceptions Specification 3.10.3.

ACTION (Continued)

c) A core power distribution measurement is obtained and $F_Q(Z)$ and $F^N_{\Delta H}$ are verified to be within their limits within 72 hours; and

d) The THERMAL POWER level is reduced to less than or equal to 75% of RATED THERMAL POWER within the next hour and within the following 4 hours the High Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER.

c. With more than one rod trippable but inoperable due to causes other than addressed by ACTION a. above, POWER OPERATION may continue provided that:

1. Within 1 hour, the remainder of the rods in the bank(s) with the inoperable rods are aligned to within ± 12 steps of the inoperable rods while maintaining the rod sequence and insertion limits as specified in the COLR. The THERMAL POWER level shall be restricted pursuant to Specification 3.1.3.6 during subsequent operation, and

2. The inoperable rods are restored to OPERABLE status within 72 hours.

d. With more than one rod misaligned from its group step counter demand height by more than ± 12 steps (indicated position), be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

INSERT 1

4.1.3.1.1 The position of each full-length rod shall be determined ~~to be~~ within the group demand limit by verifying the individual rod positions ~~at least once per 12 hours~~ except during time intervals when the rod position deviation monitor is inoperable, then verify the group positions ~~at least once per 4 hours.~~

4.1.3.1.2 Each full-length rod not fully inserted in the core shall be determined to be OPERABLE by movement of at least 10 steps in any one direction ~~at least once per 31 days.~~

POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2 The Digital Rod Position Indication System and the Demand Position Indication System shall be OPERABLE and capable of determining the control rod positions within ± 12 steps.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With a maximum of one digital rod position indicator per bank inoperable either:

1. Determine the position of the nonindicating rod(s) indirectly by the movable incore detectors or a core power distribution measurement at least once per 8 hours and immediately after any motion of the nonindicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With a maximum of one demand position indicator per bank inoperable either:

1. Verify that all digital rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 12 steps of each other at least once per 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.2 Each digital rod position indicator shall be determined to be OPERABLE by verifying that the Demand Position Indication System and the Digital Rod Position Indication System agree within 12 steps ~~at least once per 12 hours~~ except during time intervals when the rod position deviation monitor is inoperable, then compare the Demand Position Indication System and the Digital Rod Position Indication System ~~at least once per 4 hours~~.

INSERT 1

REACTIVITY CONTROL SYSTEMS

ROD DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full-length (shutdown and control) rod drop time from the fully withdrawn position shall be less than or equal to 2.8 seconds from beginning of decay of stationary gripper coil voltage to dashpot entry with:

a. T_{avg} greater than or equal to 561°F, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

ACTION:

With the drop time of any full-length rod determined to exceed the above limit, restore the rod drop time to within the above limit prior to proceeding to MODE 1 or 2.

SURVEILLANCE REQUIREMENTS

4.1.3.4 The rod drop time of full-length rods shall be demonstrated through measurement prior to reactor criticality:

a. For all rods following each removal of the reactor vessel head,

b. For specifically affected individual rods following any maintenance on or modification to the Control Rod Drive System which could affect the drop time of those specific rods, and

c. ~~At least once per 18 months~~. INSERT 1

REACTIVITY CONTROL SYSTEMS

SHUTDOWN ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown rods shall be fully withdrawn, as specified in the Core Operating Limits Report (COLR).

APPLICABILITY: MODES 1* and 2* **.

ACTION:

With a maximum of one shutdown rod not fully withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, within 1 hour either:

a. Fully withdraw the rod, or

b. Declare the rod to be inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown rod shall be determined to be fully withdrawn:

a. Within 15 minutes prior to withdrawal of any rods in Control Bank A, B, C, or D during an approach to reactor criticality, and

b. ~~At least once per 12 hours thereafter~~. INSERT 1

*See Special Test Exceptions Specifications 3.10.2 and 3.10.3.

**With K_{eff} greater than or equal to 1.

CONTROL ROD INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.6 The control banks shall be limited in physical insertion as specified in the CORE OPERATING LIMITS REPORT.

APPLICABILITY: MODES 1* and 2* **.

ACTION:

With the control banks inserted beyond the above insertion limits, except for surveillance testing pursuant to Specification 4.1.3.1.2:

a. Restore the control banks to within the limits within 2 hours, or

b. Reduce THERMAL POWER within 2 hours to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the bank position using the insertion limits specified in the CORE OPERATING LIMITS REPORT, or

c. Be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.6 The position of each control bank shall be determined to be within the insertion limits ~~at least once per 12 hours~~ except during time intervals when the rod insertion limit monitor is inoperable, then verify the individual rod positions ~~at least once per 4 hours~~. INSERT

*See Special Test Exceptions Specifications 3.10.2 and 3.10.3.

**With K_{eff} greater than or equal to 1.

POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

3. greater than 15%, but less than 50% of RATED THERMAL POWER:

   THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless the indicated AFD has not been outside of the target band for more than 1 hour cumulative penalty deviation during the previous 24 hours.

b. THERMAL POWER shall not be increased above 90% of RATED THERMAL POWER unless the indicated AFD is within the target band, and the indicated AFD has not been outside of the target band for more than 1 hour cumulative penalty deviation during the previous 24 hours.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The indicated AFD shall be determined to be within its limits during POWER OPERATION above 15% of RATED THERMAL POWER by:

INSERT 1

a. Monitoring the indicated AFD for each OPERABLE excore channel ~~at least once per 7 days~~ when the AFD Monitor Alarm is OPERABLE.

b. Monitoring and logging the indicated AFD for each OPERABLE excore channel ~~at least once per hour for the first 24 hours, and at least once per 30 minutes thereafter~~, when the AFD Monitor Alarm is inoperable. The logged values of the indicated AFD shall be assumed to exist during the interval preceding each logging.

4.2.1.2 The indicated AFD shall be considered outside of its target band when two or more OPERABLE excore channels are indicating the AFD to be outside the target band. Penalty deviation outside of the above required target band shall be accumulated on a time basis of:

a. One minute penalty deviation for each 1 minute of POWER OPERATION outside of the target band at THERMAL POWER levels equal to or above 50% of RATED THERMAL POWER, and

b. One-half minute penalty deviation for each 1 minute of POWER OPERATION outside of the target band at THERMAL POWER levels between 15% and 50% of RATED THERMAL POWER.

4.2.1.3 The target flux difference of each OPERABLE excore channel shall be determined by measurement at least once per 92 Effective Full Power Days. The provisions of Specification 4.0.4 are not applicable.

4.2.1.4 The target flux difference shall be updated at least once per 31 Effective Full Power Days by either determining the target flux difference

3/4.2.4 QUADRANT POWER TILT RATIO

LIMITING CONDITION FOR OPERATION

3.2.4 The QUADRANT POWER TILT RATIO shall not exceed 1.02.

APPLICABILITY: MODE 1, above 50% of RATED THERMAL POWER*.

ACTION:

With the QUADRANT POWER TILT RATIO determined to exceed 1.02:

a. Within 2 hours reduce THERMAL POWER at least 3% from RATED THERMAL POWER for each 1% of indicated QUADRANT POWER TILT RATIO in excess of 1 and similarly reduce the Power Range Neutron Flux-High Trip Setpoint within the next 4 hours.

b. Within 24 hours and every 7 days thereafter, verify that $F_Q(Z)$ (by F_{xy} evaluation) and $F^N_{\Delta H}$ are within their limits by performing Surveillance Requirements 4.2.2.2 and 4.2.3.2. THERMAL POWER and setpoint reductions shall then be in accordance with the ACTION statements of Specifications 3.2.2 and 3.2.3.

SURVEILLANCE REQUIREMENTS

4.2.4.1 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 50% of RATED THERMAL POWER by:

INSERT 1

a. Calculating the ratio ~~at least once per 7 days~~ when the alarm is OPERABLE, and

b. Calculating the ratio ~~at least once per 12 hours~~ during steady-state operation when the alarm is inoperable.

4.2.4.2 The QUADRANT POWER TILT RATIO shall be determined to be within the limit when above 75% of RATED THERMAL POWER with one Power Range channel inoperable by measuring core power distribution to confirm indicated QUADRANT POWER TILT RATIO ~~at least once per 12 hours~~ by using:

a. The Power Distribution Monitoring System (PDMS), or

b. The movable incore detectors by either:

1. Using the four pairs of symmetric thimble locations, or

2. Using the movable incore detection system to monitor the QUADRANT POWER TILT RATIO with a full incore map.

* See Special Test Exceptions Specification 3.10.2.

3/4.2.5 DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB-related parameters shall be maintained within the limits following:

a. Reactor Coolant System T_{avg}, ≤ the limit as specified in the Core Operating Limits Report

b. Pressurizer Pressure, > the limit as specified in the Core Operating Limits Report

c. Thermal Design Reactor Coolant System Flow, ≥ 392,000 gpm

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the parameters shown above shall be verified to be within its limits ~~at least once per 12 hours~~. The provisions of Specification 4.0.4 are not applicable for verification that RCS flow is within its limit.

INSERT 1

4.2.5.2 The RCS flow rate indicators shall be subjected to a channel calibration ~~at least once per 18 months~~.

> NOTE
> SR 4.2.5.3 is required at beginning-of-cycle with reactor power ≥ 90% RTP.

4.2.5.3 The RCS total flow rate shall be determined by precision heat balance or elbow tap ΔP measurements ~~at least once per 18 months~~. The provisions of Specification 4.0.4 are not applicable.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the Reactor Trip System instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Chapter 16 in the Updated Final Safety Analysis Report (UFSAR).

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each Reactor Trip System instrumentation channel and interlock and the automatic trip logic shall be demonstrated OPERABLE by the performance of the Reactor Trip System Instrumentation Surveillance Requirements specified in Table 4.3-1. INSERT 2

INSERT 1

4.3.1.2 The REACTOR TRIP SYSTEM RESPONSE TIME of each Reactor trip function shall be verified to be within its limit ~~at least once per 18 months~~. Each verification shall include at least one train such that both trains are verified ~~at least once per 36 months~~ and one channel per function such that all channels are verified at least once every N times ~~18 months~~ where N is the total number of redundant channels in a specific Reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

INSERT 3

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK(20)	CHANNEL CALIBRATION(20)	ANALOG CHANNEL OPERATIONAL TEST (19)(20)	TRIP ACTUATING DEVICE OPERATIONAL TEST(20)	ACTUATION LOGIC TEST(20)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	N.A	~~R~~(14)	N.A.	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux						
a. High Setpoint	~~S~~	~~D~~(2, 4), ~~M~~(3, 4), ~~Q~~(4, 6), ~~R~~(4, 5)	~~Q~~(17)	N.A.	N.A.	1, 2
b. Low Setpoint	~~S~~	~~R~~(4)	S/U (1)	N.A.	N.A.	1***, 2
3. Power Range, Neutron Flux, High Positive Rate	N.A.	~~R~~(4)	~~Q~~(17)	N.A.	N.A.	1, 2
4. Deleted						
5. Intermediate Range, Neutron Flux	~~S~~	~~R~~(4, 5)	S/U (1)	N.A.	N.A.	1***, 2
6. Source Range, Neutron Flux	~~S~~	~~R~~(4, 5)	S/U (1), ~~Q~~(9) (17)	N.A.	N.A.	2**, 3, 4, 5
7. Extended Range, Neutron Flux	~~S~~	~~R~~(4)	~~Q~~(12, 17)	N.A.	N.A.	3, 4, 5
8. Overtemperature ΔT	~~S~~	~~R~~	~~Q~~(17)	N.A.	N.A.	1, 2
9. Overpower ΔT	~~S~~	~~R~~	~~Q~~(17)	N.A.	N.A.	1, 2
10. Pressurizer Pressure--Low	~~S~~	~~R~~	~~Q~~(17)	N.A.	N.A.	1

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK(20)	CHANNEL CALIBRATION(20)	ANALOG CHANNEL OPERATIONAL TEST (19)(20)	TRIP ACTUATING DEVICE OPERATIONAL TEST (20)	ACTUATION LOGIC TEST(20)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. Pressurizer Pressure --High	~~S~~	~~R~~	~~Q~~(17)	N.A.	N.A.	1, 2
12. Pressurizer Water Level --High	~~S~~	~~R~~	~~Q~~(17)	N.A.	N.A.	1
13. Reactor Coolant Flow --Low	~~S~~	~~R~~	~~Q~~(17, 18)	N.A.	N.A.	1
14. Steam Generator Water Level--Low-Low	~~S~~	~~R~~	~~Q~~(17, 18)	N.A.	N.A.	1, 2
15. Undervoltage - Reactor Coolant Pumps	N.A.	~~R~~	N.A.	~~Q~~(17)	N.A.	1
16. Underfrequency - Reactor Coolant Pumps	N.A.	~~R~~	N.A.	~~Q~~(17)	N.A.	1
17. Turbine Trip						
a. Low Emergency Trip Fluid Pressure	N.A.	~~R~~	N.A.	S/U(1, 10)	N.A.	1
b. Turbine Stop Valve Closure	N.A.	~~R~~	N.A.	S/U(1, 10)	N.A.	1
18. Safety Injection Input from ESFAS	N.A.	N.A.	N.A.	~~R~~	N.A.	1, 2

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK (20)	CHANNEL CALIBRATION (20)	ANALOG CHANNEL OPERATIONAL TEST (19) (20)	TRIP ACTUATING DEVICE OPERATIONAL TEST (20)	ACTUATION LOGIC TEST (20)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
19. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	N.A.	~~R~~(4)	~~R~~	N.A.	N.A.	2**
b. Low Power Reactor Trips Block, P-7	N.A.	~~R~~(4)	~~R~~	N.A.	N.A.	1
c. Power Range Neutron Flux, P-8	N.A.	~~R~~(4)	~~R~~	N.A.	N.A.	1
d. Power Range Neutron Flux, P-9	N.A.	~~R~~(4)	~~R~~	N.A.	N.A.	1
e. Power Range Neutron Flux, P-10	N.A.	~~R~~(4)	~~R~~	N.A.	N.A.	1, 2
f. Turbine Impulse Chamber Pressure, P-13	N.A.	~~R~~	~~R~~	N.A.	N.A.	1
20. Reactor Trip Breaker	N.A.	N.A.	N.A.	~~Q~~(7, 11)	N.A.	1, 2, 3*, 4*, 5*
21. Automatic Trip and Interlock Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(7)	1, 2, 3*, 4*, 5*
22. Reactor Trip Bypass Breaker	N.A.	N.A.	N.A.	~~Q~~(15), R(16)	N.A.	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

*When the Reactor Trip System breakers are closed and the Control Rod Drive System is capable of rod withdrawal.

**Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

***Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

(1) If not performed in previous 31 days.

(2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable to entry into MODE 2 or 1.

*(3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 15% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purpose of this surveillance requirement, monthly shall mean at least once per 31 EFPD.

(4) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) Detector plateau curves shall be obtained and evaluated. If a low noise preamplifier is used with the Source Range Detector, no plateau curve is obtained. Instead, with the high voltage setting varied as recommended by the manufacturer, an initial discriminator bias curve shall be measured for each detector. Subsequent discriminator bias curves shall be obtained, evaluated and compared to the initial curves. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

*(6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1. For the purpose of this surveillance requirement, quarterly shall mean at least once per 92 EFPD.

(7) Each train shall be tested ~~at least every 92 days on a STAGGERED TEST BASIS~~. INSERT 1

(8) (Not Used)

(9) Quarterly surveillance in MODES 3*, 4*, and 5* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window.

TABLE 4.3-1 (Continued)

TABLE NOTATIONS (Continued)

(10) Setpoint verification is not applicable.

(11) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.

(12) OPERABILITY shall be verified by a check of memory devices, input accuracies, Boron Dilution Alarm setpoints, output values, and software functions.

(13) (Not used)

(14) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).

(15) Local manual shunt trip prior to placing breaker in service.

(16) Automatic undervoltage trip.

(17) Each channel shall be tested ~~at least every 92 days on a STAGGERED TEST BASIS~~. INSERT 1

(18) The surveillance frequency and/or MODES specified for these channels in Table 4.3-2 are more restrictive and, therefore, applicable.

(19) For channels with bypass test instrumentation, input relays are tested ~~on an 18 month (R) frequency.~~ INSERT 1

(20) INSERT 4

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by performance of the ESFAS Instrumentation Surveillance Requirements specified in Table 4.3-2 ← INSERT 5

4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be verified to be within the limit ~~at least once per 18 months~~. Each verification shall include at least one train so that:

INSERT 1

a. Each logic train is verified ~~at least once per 36 months~~,

b. Each actuation train is verified ~~at least once per 54 months~~*, and

INSERT 3

c. One channel per function so that all channels are verified at least once per N times ~~18 months~~ where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" column of Table 3.3-3.

*If an ESFAS instrumentation channel is inoperable due to response times exceeding the required limits, perform an engineering evaluation to determine if the verification failure is a result of degradation of the actuation relays. If degradation of the actuation relays is determined to be the cause, increase the ENGINEERED SAFETY FEATURES RESPONSE TIME surveillance frequency such that all trains are verified ~~at least once per 36 months~~. INSERT 1

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK (9)	CHANNEL CALIBRATION (9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7) (9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST (9)	MASTER RELAY TEST (9)	SLAVE RELAY TEST (9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Safety Injection (Reactor Trip, Feedwater Isolation, Control Room Emergency Ventilation, Start Standby Diesel Generators, Reactor Containment Fan Coolers, and Essential Cooling Water)								
a. Manual Initiation	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3, 4
c. Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4
d. Containment Pressure-High-1	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
e. Pressurizer Pressure-Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
f. Compensated Steam Line Pressure -Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK(9)	CHANNEL CALIBRATION(9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST(9)	MASTER RELAY TEST(9)	SLAVE RELAY TEST(9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
2. Containment Spray								
a. Manual Initiation	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3, 4
c. Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4
d. Containment Pressure-High-3	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
3. Containment Isolation								
a. Phase "A" Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3, 4
3) Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4
4) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
b. Containment Ventilation Isolation								
1) Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3, 4
2) Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK (9)	CHANNEL CALIBRATION (9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST (9)	MASTER RELAY TEST (9)	SLAVE RELAY TEST (9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
3. Containment Isolation (Continued)								
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
4) RCB Purge Radioactivity - High	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4, 5*, 6*
5) Containment Spray - Manual Initiation	See Item 2. above for Containment Spray manual initiation Surveillance Requirements.							
6) Phase "A" Isolation - Manual Initiation	See Item 3. a. above for Phase "A" Isolation manual initiation Surveillance Requirements.							
c. Phase "B" Isolation								
1) Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3, 4
2) Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4
3) Containment Pressure -- High-3	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
4) Containment Spray - Manual Initiation	See Item 2. above for Containment Spray manual initiation Surveillance Requirements.							
d. RCP Seal Injection Isolation								
1) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~	~~Q~~(8)	1, 2, 3, 4
2) Charging Header Pressure - Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
Coincident with Phase "A" Isolation	See Item 3.a. above for Phase "A" surveillance requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK (9)	CHANNEL CALIBRATION (9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST (9)	MASTER RELAY TEST (9)	SLAVE RELAY TEST (9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
4. Steam Line Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	~~Q~~(6)	~~Q~~(8)	1, 2, 3
c. Steam Line Pressure-Negative Rate - High	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	3
d. Containment Pressure – High - 2	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Compensated Steam Line Pressure - Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
5. Turbine Trip and Feedwater Isolation								
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	~~Q~~(6)	~~Q~~(8)	1, 2, 3
b. Steam Generator Water Level-High-High (P-14)	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
c. Deleted								
d. Deleted								
e. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK(9)	CHANNEL CALIBRATION(9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST(9)	MASTER RELAY TEST (9)	SLAVE RELAY TEST(9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5. Turbine Trip and Feedwater Isolation (Continued)								
f. Tavg - Low Coincident with Reactor Trip (P-4) (Feedwater Isolation Only)	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
6. Auxiliary Feedwater								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A.	~~Q~~(1)	N.A.	N.A.	1, 2, 3
c. Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(8)	1, 2, 3
d. Steam Generator Water Level--Low-Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
f. Loss of Power	See Item 8. below for all Loss of Power Surveillance Requirements.							
7. Automatic Switchover to Containment Sump								
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	~~Q~~(6)	~~Q~~(8)	1, 2, 3, 4
b. RWST Level -- Low-Low	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
Coincident With: Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK (9)	CHANNEL CALIBRATION (9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7) (9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST (9)	MASTER RELAY TEST (9)	SLAVE RELAY TEST (9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
8. Loss of Power								
a. 4.16 kV ESF Bus Undervoltage (Loss of Voltage)	N.A.	~~R~~	N.A.	~~Q~~	N.A.	N.A.	N.A.	1, 2, 3, 4
b. 4.16 kV ESF Bus Undervoltage (Tolerable Degraded Voltage Coincident with SI)	N.A.	~~R~~	N.A.	~~Q~~	N.A.	N.A.	N.A.	1, 2, 3, 4
c. 4.16 kV ESF Bus Undervoltage (Sustained Degraded Voltage)	N.A.	~~R~~	N.A.	~~Q~~	N.A.	N.A.	N.A.	1, 2, 3, 4
9. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Low-Low T_{avg}, P-12	N.A.	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	1, 2, 3
c. Reactor Trip, P-4	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	1, 2, 3
10. Control Room Ventilation								
a. Manual Initiation	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	All

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK(9)	CHANNEL CALIBRATION(9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST (9)	ACTUATION LOGIC TEST(9)	MASTER RELAY TEST(9)	SLAVE RELAY TEST(9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
10. Control Room Ventilation (Continued)								
b. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
c. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	N.A.	N.A.	All
d. Control Room Intake Air Radioactivity-High	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	All
e. Loss of Power	See Item 8. above for all Loss of Power Surveillance Requirements.							
11. FHB HVAC								
a. Manual Initiation	N.A.	N.A.	N.A.	~~R~~	N.A.	N.A.	N.A.	1,2,3.4, or with irradiated fuel in the spent fuel pool
b. Automatic Actuation Relays	N.A.	N.A.	N.A.	N.A.	~~Q~~(6)	N.A.	N.A.	1,2,3,4, or with irradiated fuel in the spent fuel pool

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK(9)	CHANNEL CALIBRATION(9)	DIGITAL OR ANALOG CHANNEL OPERATIONAL TEST (7)(9)	TRIP ACTUATING DEVICE OPERATIONAL TEST(9)	ACTUATION LOGIC TEST(9)	MASTER RELAY TEST(9)	SLAVE RELAY TEST(9)	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FHB HVAC (Continued)								
c. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
d. Spent Fuel Pool Exhaust Radio-activity-High	~~S~~	~~R~~	~~Q~~	N.A.	N.A.	N.A.	N.A.	With irradiated fuel in spent fuel pool.

TABLE NOTATION

(1) Each train shall be tested at ~~least every 92 days on a STAGGERED TEST BASIS~~. INSERT 3

(2) Deleted

(3) Deleted

(4) Deleted

(5) Deleted

INSERT 1

(6) Each actuation train shall be tested ~~every 92 days on a STAGGERED TEST BASIS~~. Testing of each actuation train shall include master relay testing of both logic trains. If an ESFAS instrumentation channel is inoperable due to failure of the Actuation Logic Test and/or Master Relay Test, increase the surveillance frequency such that each train is tested at ~~least every 62 days on a STAGGERED TEST BASIS~~ unless the failure can be determined by performance of an engineering evaluation to be a single random failure. INSERT 3

(7) For channels with bypass test instrumentation, input relays are tested ~~on an 18 month (R) frequency~~. INSERT 1

(8) The test interval is R for Potter & Brumfield MDR Series slave relays.

(9) INSERT 4

* During CORE ALTERATIONS or movement of irradiated fuel within containment.

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The Remote Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With one or more required channels of one or more Remote Shutdown System Functions inoperable, restore the inoperable Function(s) to OPERABLE status within 30 days, or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

NOTE: Separate condition entry is allowed for each Function.

SURVEILLANCE REQUIREMENTS

4.3.3.5.1 Each normally energized Remote Shutdown System monitoring instrumentation channel shall be demonstrated OPERABLE by performance of a CHANNEL CHECK ~~at least once per 31 days~~.

INSERT 1

4.3.3.5.2 Each Remote Shutdown System transfer switch, power and control circuit including the actuated components, shall be demonstrated OPERABLE ~~at least once per 18 months.~~

4.3.3.5.3 Each Remote Shutdown System required instrumentation channel shall be demonstrated OPERABLE by performance of a CHANNEL CALIBRATION ~~at least once per 18 months~~. [NOTE: Neutron detectors and reactor trip breaker indication are excluded from CHANNEL CALIBRATION.]

NOTE: This corrected page was issued by letter dated February 8, 2005

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

As shown in Table 3.3-10.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION ~~at the frequencies shown in Table 4.3-7.~~ INSERT 1

INSTRUMENTATION

3/4.3.5 ATMOSPHERIC STEAM RELIEF VALVE INSTRUMENTATION

LIMITING CONDITION FOR OPERATION:

3.3.5.1 The atmospheric steam relief valve instrumentation shown in Table 3.3-14 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-14

ACTION: As shown in Table 3.3-14

SURVEILLANCE REQUIREMENTS:

INSERT 1

4.3.5.1 Perform a CHANNEL CHECK on each atmospheric steam relief valve automatic actuation channel ~~at least once per 12 hours~~.

4.3.5.2 Perform a CHANNEL CALIBRATION on each atmospheric steam relief valve automatic actuation channel at a nominal setpoint of 1225 psig ± 7 psi ~~at least once every 18 months~~.

4.3.5.3 Perform an ANALOG CHANNEL OPERATIONAL TEST on each atmospheric steam relief valve automatic actuation channel at a nominal setpoint of 1225 psig ± 7 psi ~~at least once every 18 months~~.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 All reactor coolant loops shall be in operation.

APPLICABILITY: MODES 1 and 2.*

ACTION:

With less than the above required reactor coolant loops in operation, be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified in operation and circulating reactor coolant ~~at least once per 12 hours~~. INSERT 1

*See Special Test Exceptions Specification 3.10.4.

REACTOR COOLANT SYSTEM

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 At least two of the reactor coolant loops listed below shall be OPERABLE and with two reactor coolant loops in operation when the Reactor Trip System breakers are closed and one reactor coolant loop in operation when the Reactor Trip System breakers are open:*

a. Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,

b. Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,

c. Reactor Coolant Loop C and its associated steam generator and reactor coolant pump, and

d. Reactor Coolant Loop D and its associated steam generator and reactor coolant pump.

APPLICABILITY: MODE 3.

ACTION:

a. With less than the above required reactor coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

b. With only one reactor coolant loop in operation and the Reactor Trip System breakers in the closed position, within 1 hour open the Reactor Trip System breakers.

c. With no reactor coolant loop in operation, suspend operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN of LCO 3.1.1 and immediately initiate corrective action to return the required reactor coolant loop to operation.

SURVEILLANCE REQUIREMENTS

INSERT 1

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined OPERABLE ~~once per 7 days~~ by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 The required steam generators shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 10% narrow range~~, at least once per 12 hours~~.

4.4.1.2.3 The required reactor coolant loops shall be verified in operation and circulating reactor coolant~~, at least once per 12 hours~~.

*All reactor coolant pumps may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause introduction into the RCS of coolant with boron concentration less than that required to meet SHUTDOWN MARGIN of LCO 3.1.1, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

REACTOR COOLANT SYSTEM

HOT SHUTDOWN

SURVEILLANCE REQUIREMENTS

INSERT 1

4.4.1.3.1 The required reactor coolant pump(s) and/or RHR pump(s), if not in operation, shall be determined OPERABLE ~~once per 7 days~~ by verifying correct breaker alignments and indicated power availability.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 10% narrow range ~~at least once per 12 hours~~.

4.4.1.3.3 At least one reactor coolant loop, or one RHR loop with valve CV0198 locked or pinned in position to limit flow to 125 gpm shall be verified in operation and circulating reactor coolant ~~at least once per 12 hours~~.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one residual heat removal (RHR) loop with valve CV0198 locked or pinned in position to limit flow to 125 gpm shall be OPERABLE and in operation*, and either:

a. One additional RHR loop shall be OPERABLE**, or

b. The secondary side water level of at least two steam generators shall be greater than 10% narrow range.

APPLICABILITY: MODE 5 with reactor coolant loops filled***.

ACTION:

a. With two of the RHR loops inoperable and with less than the required steam generator water level, immediately initiate corrective action to return one of the inoperable RHR loops to OPERABLE status or restore the required steam generator water level as soon as possible.

b. With no RHR loop in operation, suspend operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN of LCO 3.1.1 and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits ~~at least once per 12 hours~~.

4.4.1.4.1.2 At least one RHR loop with valve CV0198 locked or pinned in position to limit flow to 125 gpm shall be determined to be in operation and circulating reactor coolant ~~at least once per 12 hours.~~

INSERT 1

*The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause introduction into the RCS of coolant with boron concentration less than that required to meet SHUTDOWN MARGIN of LCO 3.1.1, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

**Two RHR loops may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE and in operation.

***A reactor coolant pump shall not be started with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 350°F unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold leg temperatures.

COLD SHUTDOWN - LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2

a. At least two residual heat removal (RHR) loops shall be OPERABLE* and at least one RHR loop shall be in operation**, and

b. Each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.

b. With no RHR loop in operation, suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN of LCO 3.1.1 and immediately initiate corrective action to return the required RHR loop to operation.

c. With a valve or mechanical joint used to isolate unborated water sources not secured in the closed position, immediately suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN specified in the Core Operating Limits Report (COLR) and initiate action to secure the valve(s) or joint(s) in the closed position and within 4 hours verify boron concentration is within limits specified in the COLR. The required action to verify the boron concentration within limits must be completed whenever ACTION c is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2.1 At least one RHR loop shall be determined to be in operation and circulating reactor coolant~~ at least once per 12 hours~~.

INSERT 1

4.4.1.4.2.2 Each valve or mechanical joint used to isolate unborated water sources shall be verified closed and secured in position~~ at least once per 31 days.~~

*Two RHR loops may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE and in operation.

**The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause introduction into the RCS of coolant with boron concentration less than that required to meet SHUTDOWN MARGIN of LCO 3.1.1, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

3/4.4.3 PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3 The pressurizer shall be OPERABLE with a water volume of less than or equal to 1816 cubic feet, and at least two groups of pressurizer heaters supplied by ESF power each having a capacity of at least 175 kW.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With only one group of pressurizer heaters supplied by ESF power OPERABLE, restore at least two groups to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With the pressurizer otherwise inoperable, be in at least HOT STANDBY with the Reactor Trip System breakers open within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The pressurizer water volume shall be determined to be within its limit~~, at least once per 12 hours~~.

4.4.3.2 The capacity of each of the above required groups of pressurizer heaters supplied by ESF power shall be verified by energizing the heaters and measuring circuit current~~, at least once per 92 days~~.

INSERT 1

REACTOR COOLANT SYSTEM

ˋELIEF VALVES

SURVEILLANCE REQUIREMENTS

4.4.4.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE ~~at least once per 18 months~~ by: INSERT

a. Performing a CHANNEL CALIBRATION on the actuation channel, and

b. Operating the valve through one complete cycle of full travel.

4.4.4.2 Each block valve shall be demonstrated OPERABLE ~~at least once per 92 days~~ by operating the valve through one complete cycle of full travel unless the block valve is closed in accordance with the ACTIONS of Specification 3.4.4.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System Leakage Detection Instrumentation shall be OPERABLE:

a. The Containment Atmosphere Radioactivity Monitor (particulate channel), and

b. The Containment Normal Sump Level and Flow Monitoring System.

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

ACTION:

a. With the required containment atmosphere radioactivity monitor inoperable perform the following actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours:

1) Restore the containment atmosphere monitor (particulate channel) to OPERABLE status within 30 days and,

2) Obtain and analyze a grab sample of the containment atmosphere for particulate radioactivity at least once per 24 hours, or

3) Perform a Reactor Coolant System water inventory balance at least once per 24 hours.

b. With the required containment normal sump level and flow monitoring system inoperable perform the following actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours:

1) Restore the containment normal sump and flow monitoring system to OPERABLE status within 30 days and,

2) Perform a Reactor Coolant System water inventory balance at least once per 24 hours.

c. With both a. and b. inoperable, enter 3.0.3.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The Leakage Detection Systems shall be demonstrated OPERABLE by:

INSERT 1

a. Containment Atmosphere Monitoring (particulate channel) performance of the following:
1) CHANNEL CHECK ~~at least once per 12 hours~~, and
2) CHANNEL CALIBRATION ~~at least once per 18 months~~

b. Containment Normal Sump Level and Flow Monitoring System performance of CHANNEL CALIBRATION ~~at least once per 18 months~~.

SURVEILLANCE REQUIREMENTS (Continued)

4.4.6.2.1 Note: this requirement is not applicable to primary-to-secondary leakage (refer to 4.4.6.2.3).

Reactor Coolant System operational leakage shall be demonstrated to be within each of the above limits by:

INSERT 1

a. Monitoring the containment atmosphere particulate radioactivity channel ~~at least once per 12 hours~~;

b. Monitoring the containment normal sump inventory and discharge ~~at least once per 12 hours~~;

c. Performance of a Reactor Coolant System water inventory balance ~~at least once per 72 hours~~; and (1)

d. Monitoring the Reactor Head Flange Leakoff System ~~at least once per 24 hours.~~

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit:

a. ~~At least once per 18 months,~~

b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months,

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve, and

d. Prior to entering MODE 2 following valve actuation due to automatic or manual action or flow through the valve except for valves XRH0060 A, B, C, and XRH0061 A, B, C.

4.4.6.2.3 Primary-to-secondary leakage shall be verified ≤ 150 gallons per day through any one steam generator ~~at least once per 72 hours~~. (1)

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

---

(1) Not required to be performed until 12 hours after establishment of steady state operation.

TABLE 4.4-4

REACTOR COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	MODES IN WHICH SAMPLE AND ANALYSIS REQUIRED
1. Gross Radioactivity Determination	~~At least once per 72 hours~~.	1, 2, 3, 4
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	~~1 per 14 days~~.	1
3. Radiochemical for $\bar{E}$ Determination*	~~1 per 6 months~~**	1
4. Isotopic Analysis for Iodine Including I-131, I-133, and I-135	a) ~~Once per 4 hours~~, whenever the specific activity exceeds 1 µCi/gram DOSE EQUIVALENT I-131 or 100/$\bar{E}$ µCi/gram of gross radioactivity, and	1#, 2#, 3#, 4#, 5#
	b) One sample between 2 and 6 hours following a THERMAL POWER change exceeding 15% of the RATED THERMAL POWER within a 1-hour period.	1, 2, 3

INSERT 1

REACTOR COOLANT SYSTEM

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.9.1 The Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures 3.4-2 and 3.4-3 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing with:

a. A maximum heatup of 100°F in any 1-hour period,

b. A maximum cooldown of 100°F in any 1-hour period, and

c. A maximum temperature change of less than or equal to 10°F in any 1-hour period during inservice hydrostatic and leak testing operations above the heatup and cooldown limit curves.

APPLICABILITY: At all times.

ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the RCS T_{avg} and pressure to less than 200°F and 500 psig, respectively, within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.9.1.1 The Reactor Coolant System temperature and pressure shall be determined to be within the limits ~~at least once per 30 minutes~~ during system heatup, cooldown, and inservice leak and hydrostatic testing operations.

INSERT 1

4.4.9.1.2 The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, as required by 10 CFR Part 50, Appendix H. The results of these examinations shall be used to update Figures 3.4-2, 3.4-3 and 3.4-4.

SURVEILLANCE REQUIREMENTS

4.4.9.3.1 Each PORV shall be demonstrated OPERABLE by:

a. Performance of an ANALOG CHANNEL OPERATIONAL TEST on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required OPERABLE and ~~at least once per 31 days~~ thereafter when the PORV is required OPERABLE;

INSERT 1

b. Performance of a CHANNEL CALIBRATION on the PORV actuation channel ~~at least once per 18 months~~; and

c. Verifying the PORV block valve is open ~~at least once per 72 hours~~ when the PORV is being used for overpressure protection.

4.4.9.3.2 The RCS vent(s) shall be verified to be open ~~at least once per 12 hours~~[4] when the vent(s) is being used for overpressure protection.

4.4.9.3.3 The positive displacement pump shall be demonstrated inoperable ~~at least once per 31 days~~, except when the reactor vessel head is removed or when both centrifugal charging pumps are inoperable and secured, by verifying that the motor circuit breakers are secured in the open position.[2]

4.4.9.3.4 Verify ~~at least once every 31 days~~ that only one centrifugal charging pump is capable of injecting into the RCS [5], except when the reactor vessel head is removed, by verifying that the motor circuit breakers are secured in the open position.[2]

4.4.9.3.5 Verify ~~at least once every 12 hours~~ that each ECCS accumulator is isolated.

SPECIFICATION NOTATIONS

---

[1] ECCS accumulator isolation is required only when ECCS accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by Figures 3.4-2 and 3.4-3.

[2] An inoperable centrifugal charging pump(s) and/or positive displacement charging pump may be energized for testing or pump switching provided the discharge of the pump(s) has been isolated from the RCS by a closed isolation valve with power removed from the valve operator, or by a manual isolation valve secured in the closed position. Reactor coolant pump seal injection flow may be maintained during the RCS isolation process.

[3] This ACTION may be suspended for up to 7 days to allow functional testing to verify PORV operability. During this test period, operation of systems or components which could result in an RCS mass or temperature increase will be administratively controlled. During the ASME stroke testing of two inoperable PORVS, cold overpressurization mitigation will be provided by two RHR discharge relief valves associated with two OPERABLE and operating RHR loops which have the auto closure interlock bypassed [or deleted]. If one PORV is inoperable, cold overpressure mitigation will be provided by the OPERABLE PORV and one RHR discharge relief valve associated with an OPERABLE and operating RHR loop which has the auto closure interlock bypassed [or deleted].

[4] Except when the vent pathway is provided with a valve that is locked, sealed, or otherwise secured in the open position, then verify these valves open ~~at least once per 31 days~~.

3/4.4.10 STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.4.10 The structural integrity of ASME Code Class 1, 2, and 3 components shall be maintained in accordance with Specification 4.4.10.

APPLICABILITY: All MODES.

ACTION:

a. With the structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.

b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 200°F.

c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.

SURVEILLANCE REQUIREMENTS

INSERT 1

4.4.10 In addition to the requirements of Specification 4.0.5, each reactor coolant pump flywheel shall be ultrasonically examined over the volume from the inner bore of the flywheel to the circle of one-half the outer radius~~, once every 10 years~~ and shall comply with regulatory ~~positions C.4.b (3), (4), and (5)~~ of Regulatory Guide 1.14, Revision 1, August 1975.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

LIMITING CONDITION FOR OPERATION

3.5.1 Each Safety Injection System accumulator shall be OPERABLE

APPLICABILITY: MODES 1 and 2
MODE 3 with pressurizer pressure > 1000 psig

ACTION:

a. With one accumulator inoperable, except as a result of boron concentration outside the required limits, within 24 hours restore the inoperable accumulator to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

b. With more than one accumulator inoperable, except as a result of boron concentration outside the required limits, within 1 hour restore at least two accumulators to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

c. With the boron concentration of one accumulator outside the required limit, within 72 hours restore the boron concentration to within the required limits or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

d. With the boron concentrations of more than one accumulator outside the required limit, within 1 hour restore the boron concentration of at least two accumulators to within the required limits or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1 Each accumulator shall be demonstrated OPERABLE:

a. ~~At least once per 24 hours~~ by:

INSERT 1

1) Verifying the contained borated water volume is ≥ 8800 gallons and ≤ 9100 gallons and nitrogen cover-pressure is ≥ 590 psig and ≤ 670 psig, and

2) Verifying that each accumulator isolation valve is open.

b. ~~At least once per 31 days~~ and within 6 hours* after each solution volume increase of greater than or equal to 1% of tank volume that is not the result of addition from the RWST by verifying the boron concentration of the accumulator solution is ≥ 2700 ppm and ≤ 3000 ppm and

c. ~~At least once per 31 days~~ when the RCS pressure is above 1000 psig by verifying that power to the isolation valve operator is removed.

---

* The 6 hr. SR is only required to be performed for affected accumulators

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

a. ~~At least once per 24 hours~~ by verifying that the following valves are in the indicated positions with power to the valve operators removed:

Valve Number	Valve Function	Valve Position
XSI0008 A,B,C	High Head Hot Leg Recirculation Isolation	Closed
XRH0019 A,B,C	Low Head Hot Leg Recirculation Isolation	Closed

INSERT 1

b. ~~At least once per 31 days~~ by:

1) Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points, and

2) Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1) For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2) Of the areas affected within containment at the completion of each containment entry when CONTAINMENT INTEGRITY is established.

d. ~~At least once per 18 months~~ by a visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

SURVEILLANCE REQUIREMENTS (Continued)

INSERT 1

e. ~~At least once per 18 months~~, during shutdown, by:

   1) Verifying that each automatic valve in the flow path actuates to its correct position on an Automatic Switchover to Containment Sump test signal, and

   2) Verifying that each of the following pumps start automatically upon receipt of a Safety Injection test signal:

      a) High Head Safety Injection pump, and

      b) Low Head Safety Injection pump.

f. By verifying that each of the following pumps develops the indicated differential pressure on recirculation flow when tested pursuant to Specification 4.0.5:

   1) High Head Safety Injection pump $\geq$ 1480 psid, and

   2) Low Head Safety Injection pump $\geq$ 286 psid.

g. By performing a flow test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:

   1) For High Head Safety Injection pump lines, with the High Head Safety Injection pump running, the pump flow rate is greater than 1470 gpm and less than 1620 gpm.

   2) For Low Head Safety Injection pump lines, with the Low Head Safety Injection pump running, the pump flow rate is greater than 2550 gpm and less than 2800 gpm.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - T_{avg} LESS THAN 350°F

SURVEILLANCE REQUIREMENTS

4.5.3.1.1 The ECCS components shall be demonstrated OPERABLE per the applicable requirements of Specification 4.5.2.

4.5.3.1.2 All High Head Safety Injection pumps, except the above allowed OPERABLE pumps, shall be demonstrated inoperable* by verifying that the motor circuit breakers are secured in the open position within 4 hours after entering MODE 4 from MODE 3 or prior to the temperature of one or more of the RCS cold legs decreasing below 325°F, whichever comes first, and ~~at least once per 31 days~~ thereafter.

INSERT 1

*An inoperable pump may be energized for testing or for filling accumulators provided the discharge of the pump has been isolated from the RCS by a closed isolation valve with power removed from the valve operator, or by a manual isolation valve secured in the closed position.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - T_{avg} LESS THAN OR EQUAL TO 200°F

LIMITING CONDITION FOR OPERATION

3.5.3.2 All High Head Safety Injection pumps shall be inoperable.

APPLICABILITY: MODE 5 and MODE 6 with the reactor vessel head on.

ACTION:

With a Safety Injection pump OPERABLE, restore all High Head Safety Injection pumps to an inoperable status within 4 hours.

SURVEILLANCE REQUIREMENTS

4.5.3.2 All High Head Safety Injection pumps shall be demonstrated inoperable* by verifying that the motor circuit breakers are secured in the open position ~~at least once per 31 days~~. INSERT 1

*An inoperable pump may be energized for testing or for filling accumulators provided the discharge at the pump has been isolated from the RCS by a closed isolation valve with power removed from the valve operator, or by a manual isolation valve secured in the closed position.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.5 The refueling water storage tank (RWST) shall be OPERABLE with:

a. A minimum contained borated water volume of 458,000 gallons, and

b. A boron concentration between 2800 ppm and 3000 ppm.

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

ACTION:

With the RWST inoperable, within 1 hour restore the tank to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE ~~at least once per 7 days~~ by:

INSERT 1

a. Verifying the contained borated water volume in the tank, and

b. Verifying the boron concentration of the water.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.6 RESIDUAL HEAT REMOVAL (RHR) SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 Three independent Residual Heat Removal (RHR) loops shall be OPERABLE with each loop comprised of:

a. One OPERABLE RHR pump,

b. One OPERABLE RHR heat exchanger, and

c. One OPERABLE flowpath capable of taking suction from its associated RCS hot leg and discharging to its associated RCS cold leg.*

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one RHR loop inoperable, within 7 days restore the required loop to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two RHR loops inoperable, within 24 hours restore at least two RHR loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three RHR loops inoperable, immediately initiate corrective action to restore at least one RHR loop to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.5.6.1 Each RHR loop shall be demonstrated OPERABLE on a STAGGERED TEST BASIS pursuant to the requirements of Specification 4.0.5.

INSERT 1

4.5.6.2 ~~At least once per 18 months~~ by verifying automatic interlock action of the RHR system from the Reactor Coolant System to ensure that:

a. With a simulated or actual Reactor Coolant System pressure signal greater than or equal to 350 psig, the interlocks prevent the valves from being opened.

*Valves MOV-0060 A, B, and C and MOV-0061 A, B, and C may have power removed to support the FHAR (Fire Hazard Analysis Report) assumptions.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

INSERT 1

a. ~~At least once per 31 days~~ by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Specification 3.6.3;

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than ~~once per 92 days~~.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. By verifying leakage rates in accordance with the Containment Leakage Rate Testing Program.

b. ~~At least once per 6 months~~ by verifying that only one door in each air lock can be opened at a time.

INSERT 1

c. By verifying ~~at least once per 7 days~~ that the instrument air pressure in the header to the personnel airlock seals is ≥ 90 psig.

d. By verifying the door seal pneumatic system OPERABLE ~~at least once per 18 months~~ by conducting a seal pneumatic system leak test and verifying one of the following:

1) That system pressure does not decay more than 1.5 psi from 90 psig minimum within 24 hours, or

2) That system pressure does not decay more than .50 psi from 90 psig minimum within 8 hours.

CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary containment internal pressure shall be maintained between -0.1 and +0.3 psig.

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

ACTION:

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits ~~at least once per 12 hours~~. INSERT 1

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.5 Primary containment average air temperature shall not exceed 110°F.

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

ACTION:

With the containment average air temperature greater than 110°F, reduce the average air temperature to within the limit within 8 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.5 The primary containment average air temperature shall be the arithmetical average of a minimum of four RCFC inlet temperatures and shall be determined ~~at least once per 24 hours~~. INSERT 1

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve shall be verified to be sealed closed ~~at least once per 31 days~~.

4.6.1.7.2 ~~At least once per 18 months~~, the inboard and outboard isolation valves with resilient material seals in each sealed closed 48-inch containment purge supply and exhaust penetration shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than 0.05 L_a when pressurized to P_a.

4.6.1.7.3 ~~At least once per 18 months~~ each 18-inch supplementary containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than 0.01 L_a when pressurized to P_a.

4.6.1.7.4 ~~At least once per 31 days~~ each 18-inch supplementary containment purge supply and exhaust isolation valve shall be verified to be closed or open in accordance with Specification 3.6.1.7.b.

INSERT 1

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Three independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and transferring suction to the containment sump.

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

ACTION:

a. With one Containment Spray System inoperable, within 7 days restore the inoperable Spray System to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

b. With more than one Containment Spray System inoperable, within 1 hour restore at least two Spray Systems to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 31 days~~ by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;

b. By verifying on a STAGGERED TEST BASIS, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 283 psid when tested pursuant to Specification 4.0.5;

c. ~~At least once per 18 months~~ during shutdown, by:

   1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure High 3 test signal, and

   2) Verifying that each spray pump starts automatically on a Containment Pressure High 3 test signal coincident with a sequencer start signal.

d. By verifying each spray nozzle is unobstructed following maintenance activities that could result in spray nozzle blockage.

CONTAINMENT SYSTEMS

RECIRCULATION FLUID PH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 The recirculation fluid pH control system shall be operable with between 11,500 lbs. (213 cu. ft.) and 15,100 lbs (252 cu. ft.) of trisodium phosphate (w/12 hydrates) available in the storage baskets in the containment.

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

ACTION:

With the amount of trisodium phosphate outside the specified range, restore the system to the correct amount within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the system to the correct amount within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

INSERT 1

4.6.2.2 ~~During each refueling outage, as a minimum~~, the recirculation fluid pH control system shall be demonstrated operable by visually verifying that:

a. 6 trisodium phosphate storage baskets are in place, and

b. have maintained their integrity, and

c. are filled with trisodium phosphate such that the level is within the specified range.

CONTAINMENT SYSTEMS

CONTAINMENT COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.3 Three independent groups of Reactor Containment Fan Coolers (RCFC) shall be OPERABLE with a minimum of two units in two groups and one unit in the third group.

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

ACTION:

a. With one group of the above required Reactor Containment Fan Coolers inoperable, within 7 days restore the inoperable group of RCFC to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With more than one group of the above required Reactor Containment Fan Coolers inoperable, within 1 hour restore at least two groups of RCFC to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 Each group of Reactor Containment Fan Coolers shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 92 days~~ by:

1) Starting each non-operating fan group from the control room, and verifying that each fan group operates for at least 15 minutes, and

2) Verifying a component cooling water flow rate of greater than or equal to 1800 gpm to each cooler.

b. ~~At least once per 18 months~~ by verifying that each fan group starts automatically on a Safety Injection test signal.

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves shall be OPERABLE with isolation times less than or equal to the required isolation times.

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

ACTION:

With one or more of the isolation valve(s) inoperable, maintain at least one isolation barrier* OPERABLE in each affected penetration that is open and within 24 hours:

a. Restore the inoperable valve(s) to OPERABLE status, or

b. Isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolation position, or check valve with flow through the valve secured**, or

c. Isolate each affected penetration by use of at least one closed manual valve or blind flange, or

d. Apply the requirements of the CRMP.

Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 The isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test, and verification of isolation time.

4.6.3.2 Each isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE ~~at least once per 18 months~~ by:

INSERT 1

a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position;

b. Verifying that on a Containment Ventilation Isolation test signal, each purge and exhaust valve actuates to its isolation position; and

c. Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position.

d. Verifying that on a Phase "A" Isolation test signal, coincident with a low charging header pressure signal, that each seal injection valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

*An isolation barrier may either be a closed system (i.e., General Design Criteria 57 penetrations) or an isolation valve.

**A check valve may not be used to isolate an affected penetration flow path in which more than one isolation valve is inoperable or in which the isolation barrier is a closed system with a single isolation valve (i.e., General Design Criteria 57 penetration)

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 31 days on a STAGGERED TEST BASIS by~~:

1) Verifying that the developed head of each motor-driven pump at the flow test point is greater than or equal to the required developed head;

2) Verifying that the developed head of the steam turbine-driven pump at the flow test point is greater than or equal to the required developed head when tested at a secondary steam supply pressure greater than 1000 psig within 72 hours after entry into MODE 3;

3) Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position; and

4) Verifying that each automatic valve in the flow path is in the correct position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER.

b. ~~At least once per 18 months~~ during shutdown by:

1) Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an Auxiliary Feedwater Actuation test signal, and

2) Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation test signal.

3) Verifying that each auxiliary feedwater flow regulating valve limits the flow to each steam generator between 550 gpm and 675 gpm.

4.7.1.2.2 An auxiliary feedwater flow path to each steam generator shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater that 30 days prior to entering MODE 2 by verifying normal flow to each steam generator.

PLANT SYSTEMS

AUXILIARY FEEDWATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.7.1.3 The auxiliary feedwater storage tank (AFST) shall be OPERABLE with a contained water volume of at least 485,000 gallons of water.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With the AFST inoperable, within 4 hours restore the AFST to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.3 The AFST shall be demonstrated OPERABLE ~~at least once per 12 hours~~ by verifying the contained water volume is within its limits.

INSERT 1

TABLE 4.7-1

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY

SAMPLE AND ANALYSIS PROGRAM

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY
1. Gross Radioactivity Determination	~~At least once per 72 hours~~.
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) ~~Once per 31 days~~, whenever the gross radioactivity determination indicates concentrations greater than 10% of the allowable limit for radioiodines. b) ~~Once per 6 months~~, whenever the gross radioactivity determination indicates concentrations less than or equal to 10% of the allowable limit for radioiodines.

INSERT 1

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least three independent component cooling water loops shall be OPERABLE.

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

ACTION:

a. With only two component cooling water loops OPERABLE, within 7 days restore at least three loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two or more component cooling water loops inoperable, within 1 hour restore at least two loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least three component cooling water loops shall be demonstrated OPERABLE:

INSERT

a. ~~At least once per 31 days~~ by verifying that each valve outside containment (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and

b. ~~At least once per 18 months~~ by verifying that:

1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety portion of the system actuates to its correct position on a Safety Injection, Loss of Offsite Power, Containment Phase "B" Isolation, or Low Surge Tank test signal, as applicable (performed during shutdown);

2) Each Component Cooling Water System pump starts automatically on a Safety Injection or Loss of Offsite Power test signal (performed during shutdown); and

3) The surge tank level instrumentation which provides automatic isolation of portions of the system is demonstrated OPERABLE by performance of a CHANNEL CALIBRATION test.

c. By verifying that each valve inside containment (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position prior to entering MODE 4 following each COLD SHUTDOWN of greater than 72 hours if not performed within the previous 31 days.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least three independent essential cooling water loops shall be OPERABLE.

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

ACTION:

a. With only two essential cooling water loops OPERABLE, within 7 days restore at least three loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two or more essential cooling water loops inoperable, within 1 hour restore at least two loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least three essential cooling water loops shall be demonstrated OPERABLE:

a. ~~At least once per 31 days~~ by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position;

INSERT 1

b. ~~At least once per 18 months~~ during shutdown, by verifying that:

1) Each Essential Cooling Water automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal, and

2) Each Essential Cooling Water pump starts automatically on an actual or simulated signal.

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5 The ultimate heat sink shall be OPERABLE with:

a. A minimum water level at or above elevation 25.5 feet Mean Sea Level, USGS datum, and

b. An Essential Cooling Water intake temperature of less than or equal to 99°F.

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

ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION is applicable to both units simultaneously.

SURVEILLANCE REQUIREMENTS

4.7.5 The ultimate heat sink shall be determined OPERABLE ~~at least once per 24 hours~~ by verifying the intake water temperature and water level to be within their limits.

INSERT

1

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Three independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

MODES 1, 2, 3, and 4:

a. With one Control Room Makeup and Cleanup Filtration System inoperable, within 7 days restore the inoperable system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two Control Room Makeup and Cleanup Filtration Systems inoperable, within 72 hours restore at least two systems to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With three Control Room Makeup and Cleanup Filtration Systems inoperable, suspend all operations involving movement of spent fuel, and crane operation with loads over the spent fuel pool, and within 12 hours restore at least one system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Makeup and Cleanup Filtration Systems in the recirculation and makeup air filtration mode, or suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of spent fuel, and crane operation with loads over the spent fuel pool.

b. With more than one Control Room Makeup and Cleanup Filtration System inoperable, or with the OPERABLE Control Room Makeup and Cleanup Filtration Systems required to be in the recirculation and makeup air filtration mode by ACTION a. not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of spent fuel, and crane operations with loads over the spent fuel pool.

SURVEILLANCE REQUIREMENTS

4.7.7 Each Control Room Makeup and Cleanup Filtration System shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 12 hours~~ by verifying that the control room air temperature is less than or equal to 78°F;

b. ~~At least once per 92 days on a STAGGERED TEST BASIS~~ by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers of the makeup and cleanup air filter units and verifying that the system operates for at least 10 continuous hours with the makeup filter unit heaters operating;

SURVEILLANCE REQUIREMENTS (Continued)

c. ~~At least once per 18 months~~ or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

INSERT 1

1) Verifying that the makeup and cleanup systems satisfy the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and

3) Verifying a system flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units during system operation when tested in accordance with ANSI N510-1980.

d. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%.

e. ~~At least once per 18 months~~ by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.1 inches Water Gauge for the makeup units and 6.0 inches Water Gauge for the cleanup units while operating the system at a flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units.

2) Verifying that on a control room emergency ventilation test signal (High Radiation and/or Safety Injection test signal), the system automatically switches into a recirculation and makeup air filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks of the cleanup and makeup units;

PLANT SYSTEMS

3/4.7.8 FUEL HANDLING BUILDING (FHB) EXHAUST AIR SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8 The FHB Exhaust Air System comprised of the following components shall be OPERABLE.

a. Two independent exhaust air filter trains, and

b. Three exhaust ventilation trains.

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

ACTION:

a. With one FHB exhaust air filter train inoperable, restore the inoperable filter train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.

b. With two FHB exhaust air filter trains inoperable, restore at least one inoperable filter train to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.

c. With one FHB exhaust ventilation train inoperable, restore the inoperable exhaust ventilation train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.

d. With more than one FHB exhaust ventilation train inoperable, restore at least two exhaust ventilation trains to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8 The Fuel Handling Building Exhaust Air System shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 31 days on a STAGGERED TEST BASIS~~ by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating with two of the three exhaust booster fans and two of the three main exhaust fans operating to maintain adequate air flow rate;

b. ~~At least once per 18 months~~ and (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 29,000 cfm ± 10%;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52,

Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and

3) Verifying a system flow rate of 29,000 cfm ± 10% during system operation with two of the three exhaust booster fans and two of the three main exhaust fans operating when tested in accordance with ANSI N510-1980. All combinations of two exhaust booster fans and two main exhaust fans shall be tested.

c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%;

INSERT 1

d. ~~At least once per 18 months~~ by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 29,000 cfm ± 10%,

2) Verifying that the system starts on High Radiation and Safety Injection test signals and directs flow through the HEPA filters and charcoal adsorbers,

3) Verifying that the system maintains the FHB at a negative pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere, and

4) Verifying that the heaters dissipate 38 ± 2.3 kW when tested in accordance with ANSI N510-1980.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 29,000 cfm ± 10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorber bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.10% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 29,000 cfm ± 10%.

PLANT SYSTEMS

3/4.7.14 ESSENTIAL CHILLED WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.14 At least three independent Essential Chilled Water System loops shall be OPERABLE.

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

ACTION:

a. With only two Essential Chilled Water System loops OPERABLE, within 7 days restore at least three loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two or more Essential Chilled Water System loops inoperable, within 1 hour restore at least two loops to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.14 The Essential Chilled Water System shall be demonstrated OPERABLE by:

a. Performance of surveillances as required by Specification 4.0.5, and

INSERT 1

b. ~~At least once per 18 months~~ by demonstrating that the system starts automatically on a Safety Injection test signal.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and ~~the Onsite Class~~ 1E Distribution System shall be:

a. Determined OPERABLE ~~at least once per 7 days~~ by verifying correct breaker alignments, indicated power availability, and

b. Demonstrated OPERABLE ~~at least once per 18 months~~ during shutdown by transferring the unit power supply from the normal circuit to each of the alternate circuits.

4.8.1.1.2 Each standby diesel generator shall be demonstrated OPERABLE: (2)(11)

INSERT 1

a. ~~At least once per 31 days on a STAGGERED TEST BASIS by:~~

1) Verifying the fuel level in its associated fuel tank,

2) Verifying the diesel starts from standby condition and accelerates to 600 rpm (nominal) in less than or equal to 10 seconds.(3) The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds(3) after the start signal. The diesel generator shall be started for this test by using one of the following signals:

a) Manual, or

b) Simulated loss-of-offsite power by itself, or

c) Simulated loss-of-offsite power in conjunction with a Safety Injection test signal, or

d) A Safety Injection test signal by itself.

3) Verifying the generator is synchronized, loaded to 5000 to 5500 kW, and operates with a load of 5000 to 5500 kW for at least 60 minutes,(4)(6) and

4) Verifying the standby diesel generator is aligned to provide standby power to the associated emergency busses.

b. ~~At least once per 31 days~~ and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from its associated fuel tank;

c. Maintain properties of new and stored fuel oil in accordance with the Fuel Oil Monitoring Program.

SURVEILLANCE REQUIREMENTS (Continued)

d. Deleted

INSERT 1

e. ~~At least once per 18 months~~, during shutdown, by:

1) Deleted

2) Verifying the generator capability to reject a load of greater than or equal to 785.3 kW while maintaining voltage at 4160 ± 416 volts and frequency at 60 ± 4.5 Hz; (4)(5)

3) Verifying the generator capability to reject a load of 5500 kW without tripping. The generator voltage shall not exceed 5262 volts during and following the load rejection; (4)(5)

4) Simulating a loss-of-offsite power by itself, and:

a) Verifying deenergization of the ESF busses and load shedding from the ESF busses, and

b) Verifying the diesel starts on the auto-start signal within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the ESF busses shall be maintained at 4160 ± 416 volts and 60 ± 1.2 Hz during this test.

5) Verifying that on a Safety Injection test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test;

6) Simulating a loss-of-offsite power in conjunction with a Safety Injection test signal, and:

a) Verifying deenergization of the ESF busses and load shedding from the ESF busses;

b) Verifying the diesel starts on the auto-start signal within 10 seconds, energizes the auto-connected ESF (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator

SURVEILLANCE REQUIREMENTS (Continued)

13) Demonstrating the OPERABILITY of the automatic load shed bypass and the manual load shed reinstatement features of the load sequencer.

INSERT I

f. ~~At least once per 10 years~~ or after any modifications which could affect standby diesel generator interdependence by starting all standby diesel generators simultaneously, during shutdown, and verifying that all standby diesel generators accelerate to at least 600 rpm in less than or equal to 10 seconds; and

g. ~~At least once per 10 years~~ by draining each fuel tank, removing the accumulated sediment and cleaning the tank.

4.8.1.1.3 (Not used)

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

(Not used)

SPECIFICATION NOTATIONS

(1) Loss of one 13.8 kV Standby Bus to 4.16 kV ESF bus line constitutes loss of one offsite source. Loss of two 13.8 kV Standby busses to 4.16 kV ESF bus lines constitutes loss of two offsite sources.

(2) All diesel generator starts for the purpose of these surveillances may be preceded by a prelube period.

(3) A diesel generator start in less than or equal to 10 seconds (fast start) shall be performed INSERT 1 ~~every 184 days~~. All other diesel generator starts for the purpose of this surveillance may be modified starts involving reduced fuel (load limit) and/or idling and gradual acceleration to synchronous speed.

(4) Generator loading may be accomplished in accordance with vendor recommendations, including a warmup period prior to loading.

(5) The diesel generator start for this surveillance may be a modified start (see SR 4.8.1.1.2a.2)).

(6) Momentary transients outside this load range due to changing conditions on the grid shall not invalidate the test.

(7) If Specification 4.8.1.1.2a.2) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the standby diesel generator may be operated at 5000-5500 kW for a minimum of 2 hours or until operating temperature has stabilized.

(8) (Not used)

(9) (Not used)

(10) This test may be performed during power operation provided that the other two diesel generators are operable.

(11) Credit may be taken for events that satisfy any of these Surveillance Requirements.

(12) For the Unit 2 Train B standby diesel generator (SDG 22) failure of December 9, 2003, restore the inoperable standby diesel generator to OPERABLE status within 113 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

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

a. One circuit between the offsite transmission network and the Onsite Class 1E Distribution System, and

b. Two[1] standby diesel generators each with a separate fuel tank containing a minimum volume of 60,500 gallons of fuel.

APPLICABILITY: MODE 5 and MODE 6 with water level in the refueling cavity <23 ft above the reactor pressure vessel flange.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of irradiated fuel, operations with a potential for draining the reactor vessel or crane operation with loads over the spent fuel pool. Immediately initiate actions to restore the inoperable A.C. electrical power source to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1, 4.8.1.1.2 (except for Specification 4.8.1.1.2a.3), and 4.8.1.1.3.

4.8.1.2.1 The alternate onsite emergency power source shall be demonstrated functional by:

a. Within 4 hours of taking credit for the onsite emergency power source as a standby diesel generator, verify it starts and achieves steady state voltage (±10%) and frequency (±2%) in 5 minutes.

INSERT 1

b. Within 4 hours of taking credit for the onsite emergency power source as a standby diesel generator and ~~every 8 hours thereafter~~, verify the emergency power source is capable of being aligned to the required ESF bus by performing a breaker alignment check.

[1]An alternate onsite emergency power source, capable of supplying power for one train of shutdown cooling may be substituted for one of the required diesels for 14 consecutive days (SR 4.8.1.2.1 is the only requirement applicable).

LIMITING CONDITION FOR OPERATION (continued)

d. With more than one channel with no battery chargers OPERABLE,

1. Restore terminal voltage for at least three battery banks to greater than or equal to the minimum established float voltage within 1 hour, AND
2. Verify float current for the affected batteries does not exceed 2 amps once per 12 hours, AND
3. Restore one battery charger to OPERABLE status on at least three channels within 1 hour.

If the battery terminal voltage cannot be restored in the allowed time, float current is excessive, or a battery charger is not restored to operability in the time allowed, apply the requirements of the CRMP or the affected reactor unit is to be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

e. With one of the required channels inoperable for reasons other than (a), (b), (c), or (d) above, restore the channel to OPERABLE status within 2 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 7 days~~ by verifying that:

The total battery terminal voltage is greater than or equal to the minimum established float voltage.

b. Not used.

c. ~~At least once per 18 months~~ by verifying that:

1. The battery charger can supply at least 300 amperes at greater than or equal to the minimum established float voltage for at least 8 hours.

   OR

2. Each battery charger can recharge the battery to the fully charged state within 12 hours while supplying the largest combined demands of the various continuous steady-state loads following a battery discharge to the bounding design-basis event discharge state.

d. Not used.

e. Not used.

f. Not used.

LIMITING CONDITION FOR OPERATION (continued)

- Suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, or movement of irradiated fuel, AND

- Initiate corrective action to restore the required DC electrical power subsystems to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2 Each 125-volt battery bank shall be demonstrated OPERABLE:

a. ~~At least once per 7 days~~ by verifying that the total battery terminal voltage is greater than or equal to the minimum established float voltage.

b. ~~At least once per 18 months~~ by verifying that the battery charger can supply at least 300 amperes at greater than or equal to the minimum established float voltage for at least 8 hours.

OR

Verify each battery charger can recharge the battery to the fully charged state within 12 hours while supplying the largest combined demands of the various continuous steady-state loads following a battery discharge to the bounding design-basis event discharge state.

INSERT 1

c. NOTE: 1. The modified performance discharge test in SR 4.8.2.3.f may be performed in lieu of Surveillance Requirement 4.8.2.2.c.

2. This surveillance shall only be performed during shutdown. Credit may be taken for unplanned events that satisfy this surveillance requirement.

~~At least once per 18 months~~ by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated ESF loads for the design duty cycle when the battery is subjected to a battery service test.

LIMITING CONDITION FOR OPERATION (continued)

f. If a battery has one or more battery cells with float voltage < 2.07 volts and float current > 2 amps, declare the associated battery INOPERABLE immediately.

SURVEILLANCE REQUIREMENTS

4.8.2.3. Each 125-volt battery bank and charger shall be demonstrated operable:

a.

NOTE:	Performance of this surveillance is not required when battery terminal voltage is less than the minimum established float voltage of surveillance requirement 4.8.2.1.a.

~~At least once per 7 days,~~ verify the float current for each battery is ≤ 2 amps.

INSERT 1

b. ~~At least once per 31 days~~, verify each battery pilot cell voltage is ≥ 2.07 V on float charge.

c. ~~At least once per 92 days~~, verify each battery connected cell voltage is ≥ 2.07 V on float charge.

d. ~~At least once per 31 days~~, verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.

e. ~~At least once per 31 days,~~ verify each battery pilot cell temperature is greater than or equal to minimum established design limits.

f.

NOTE:	Battery capacity is to be verified during shutdown.

1. At least once per 12 months by giving modified performance discharge tests of battery capacity to any battery that shows degradation or reaches 85% of the service life expected for the application with capacity less than 100% of the manufacturer's rating. Degradation is indicated when battery capacity drops more than 10% from its capacity on the previous performance/modified performance discharge test, or is below 90% of the manufacturer's rating; AND

2. At least once per 24 months by giving modified performance discharge tests of battery capacity to any battery reaching 85% of the service life with capacity greater than or equal to 100% of the manufacturer's rating; AND

3. ~~At least once per 60 months,~~ by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a modified performance discharge test.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

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

ACTION:

a. With one of the required trains of A.C. ESF busses not fully energized, within 8 hours reenergize the train or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With more than one of the required trains of A.C. ESF busses not fully energized, within 1 hour reenergize at least two trains or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one A.C. vital distribution panel either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) within 2 hours reenergize the A.C. distribution panel or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and (2) within 24 hours reenergize the A.C. vital distribution panel from its associated inverter connected to its associated D.C. bus or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With more than one A.C. vital distribution panel either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) within 1 hour reenergize at least five A.C. distribution panels or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and (2) within 1 hour reenergize at least five A.C. vital distribution panels from their associated inverter connected to their associated D.C. bus or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

e. With one D.C. bus not energized from its associated battery bank, within 2 hours reenergize the D.C. bus from its associated battery bank or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

f. With more than one D.C. bus not energized from its associated battery bank, within 1 hour reenergize at least three D.C. buses from their associated battery banks or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.3.1 The specified busses shall be determined energized in the required manner ~~at least once per 7 days~~ by verifying correct breaker alignment and indicated voltage on the busses.

INSERT 1

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.3.2 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With one or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable, immediately declare associated supported required feature(s) inoperable OR immediately initiate action to suspend operations with a potential for draining the reactor vessel, suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or required boron concentration, movement of irradiated fuel, and immediately initiate corrective action to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status and declare associated required residual heat removal subsystem(s) inoperable and not in operation.

SURVEILLANCE REQUIREMENT

4.8.3.2 Verify correct breaker alignment and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems ~~at least once per 7~~ days. INSERT 1

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met; either:

a. A K_{eff} of 0.95 or less, or

b. A boron concentration of greater than or equal to 2800 ppm, and

c. Each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 6.*

ACTION:

a. With the requirements of LCO a. or b. not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2800 ppm, whichever is the more restrictive.

b. With a valve or mechanical joint used to isolate an unborated water source not secured in the closed position, immediately suspend CORE ALTERATIONS and initiate action to secure the valve(s) or mechanical joint(s) in the closed position and within 4 hours verify boron concentration is within limit. The required action to verify the boron concentration within limits must be completed whenever ACTION b. is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full-length control rod in excess of 3 feet from its fully inserted position within the reactor vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis ~~at least once per 72 hours~~.

INSERT 1

4.9.1.3 Each valve or mechanical joint used to isolate unborated water sources shall be verified closed and secured in position ~~at least once per 31 days~~.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two Source Range Neutron Flux Monitors* shall be OPERABLE, each with continuous visual indication in the control room and one with audible indication in the containment and control room.

APPLICABILITY: MODE 6.

ACTION:

a. With one of the above required monitors inoperable or not operating, immediately suspend all operations involving CORE ALTERATIONS or operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1.

b. With both of the above required monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

4.9.2 Each Source Range Neutron Flux Monitor shall be demonstrated OPERABLE by performance of:

a. A CHANNEL CHECK ~~at least once per 12 hours~~,

INSERT 1

b. A CHANNEL CALIBRATION, excluding the Neutron detectors, ~~every 18 months~~.

* An Extended Range Neutron Flux Monitor may be substituted for one of the Source Range Neutron Flux Monitors provided the OPERABLE Source Range Neutron Flux Monitor is capable of providing audible indication in the containment and control room.

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts
   OR
   1) The Reactor has been subcritical for ≥ 165 hours, AND
   2) If open, the equipment hatch is capable of being closed.

b. 1) A minimum of one door in the containment Auxiliary Airlock (AAL) is closed.
   AND
   2) A minimum of one door in the containment Personnel Airlock (PAL) is closed.
      OR
      The water level is ≥ 23 feet above the reactor vessel flange.
      AND
      The Reactor has been subcritical for ≥ 95 hours.
      AND
      An individual is available to close a PAL door when directed (after the initiation of a fuel handling accident inside containment) within;
      a. 30 minutes, if the reactor has been subcritical <165 hours.
         OR
      b. As soon as possible but within 2 hours, if the reactor has been subcritical ≥ 165 hours.

c. All other penetrations providing direct access from the containment atmosphere to the outside atmosphere shall be either:

   1) Closed by an isolation valve, blind flange, or manual valve, or

   2) Be capable of being closed by an OPERABLE automatic containment purge and exhaust isolation valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its required condition or capable of being closed as required in specification 3.9.4 within 100 hours prior to the start of and ~~at least once per 7 days~~ during CORE ALTERATIONS or movement of irradiated fuel in the containment building by (as applicable):

INSERT 1

a. Verifying the penetrations are in their required condition

b. Testing the containment purge and exhaust isolation valves per the applicable portions of Specification 4.6.3.2.

c. Proper tools are staged and trained personnel are designated to close the equipment hatch, if open.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation.*

APPLICABILITY: MODE 6, when the water level above the top of the reactor vessel flange is greater than or equal to 23 feet.

ACTION:

With no RHR loop OPERABLE and in operation, suspend all operations involving an increase in the reactor decay heat load or operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet the refueling boron concentration limit of LCO 3.9.1 and immediately initiate corrective action to return the required RHR loop to OPERABLE and operating status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.1 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm ~~at least once per 12 hours~~. INSERT 1

* The RHR loop may be removed from operation for up to 1 hour per 8-hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor vessel hot legs.

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent residual heat removal (RHR) loops shall be OPERABLE, and at least one RHR loop shall be in operation.*

APPLICABILITY: MODE 6, when the water level above the top of the reactor vessel flange is less than 23 feet.

ACTION:

a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status, or to establish greater than or equal to 23 feet of water above the reactor vessel flange, as soon as possible.

b. With no RHR loop in operation, suspend operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet the refueling boron concentration limit of LCO 3.9.1 and immediately initiate corrective action to return the required RHR loop to operation. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.2 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm ~~at least once per 12 hours~~. INSERT 1

*Prior to initial criticality, the RHR loop may be removed from operation for up to 1 hour per 8-hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor vessel hot legs.

3/4.9.9 CONTAINMENT VENTILATION ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Ventilation Isolation System shall be OPERABLE.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

a. With the Containment Ventilation Isolation System inoperable, close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere.

NOTE:

In accordance with ACTION 18.b and ACTION 18.c of Table 3.3-3, Supplementary or Normal containment purge supply and isolation valves may be open for up to 6 hours at a time for required purge operation provided the valves are under administrative control.

---

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Ventilation Isolation System shall be demonstrated OPERABLE within 100 hours prior to the start of and ~~at least once per 7 days~~ during CORE ~~ALTERATIONS by verifying that con~~tainment ventilation isolation occurs on manual initiation and on a High Radiation test signal from each of the RCB purge radiation monitoring instrumentation channels.

INSERT

3/4.9.10 WATER LEVEL - REFUELING CAVITY

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of the reactor vessel flange.

APPLICABILITY: During movement of fuel assemblies or control rods* within the refueling cavity when either the fuel assemblies being moved or the fuel assemblies seated within the reactor vessel are irradiated while in MODE 6.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of fuel assemblies or control rods within the reactor vessel.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and ~~at least once per 24 hours~~ thereafter during movement of fuel assemblies or control rods. INSERT 1

*Water level requirements are not applicable when control rods are moved in conjunction with the head package during a rapid refueling.

REFUELING OPERATIONS

3/4.9.11 WATER LEVEL - STORAGE POOLS

SPENT FUEL POOL

LIMITING CONDITION FOR OPERATION

3.9.11.1 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel pool.

ACTION:

a. With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11.1 The water level in the spent fuel pool shall be determined to be at least its minimum required depth ~~at least once per 7 days~~ when irradiated fuel assemblies are in the spent fuel pool.

INSERT 1

REFUELING OPERATIONS

IN-CONTAINMENT STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.11.2 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the in-containment storage pool.

ACTION:

a. With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11.2 The water level in the in-containment storage pool shall be determined to be at least its minimum required depth ~~at least once per 7 days~~ when irradiated fuel assemblies are in the in-containment storage pool.

INSERT 1

REFUELING OPERATIONS

3/4.9.12 FUEL HANDLING BUILDING EXHAUST AIR SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 The FHB Exhaust Air System[1] comprised of the following components shall be OPERABLE:

a. Two exhaust air filter trains,

b. Two exhaust ventilation trains

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION:

a. With less than the above FHB Exhaust Air System components OPERABLE but with at least one FHB exhaust air filter train, one FHB exhaust ventilation train, and associated dampers OPERABLE, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE FHB Exhaust Air System components are capable of being powered from an OPERABLE emergency power source and are in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With no FHB exhaust air filter train OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required FHB Exhaust Air Systems shall be demonstrated OPERABLE:

INSERT 1

a. ~~At least once per 31 days~~ on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating with the operable exhaust booster fans and the operable main exhaust fans operating to maintain adequate air flow rate;

1At least one FHB exhaust air filter train, one FHB exhaust booster fan, and one FHB main exhaust fan are capable of being powered from an OPERABLE onsite emergency power source.

SURVEILLANCE REQUIREMENTS (Continued)

b. ~~At least once per 18 months~~ and (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 29,000 cfm ± 10%;

INSERT 1

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and

3) Verifying a system flow rate of 29,000 cfm ± 10% during system operation with two of the three exhaust booster fans and two of the three main exhaust fans operating when tested in accordance with ANSI N510-1980. All combinations of two exhaust booster fans and two main exhaust fans shall be tested.

c. After every 720 hours of charcoal adsorber operation by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%.

d. ~~At least once per 18 months~~ by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 29,000 cfm ± 10%,

2) Verifying that on a High Radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks,

3/4.9.13 SPENT FUEL POOL MINIMUM BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.13 The boron concentration of the spent fuel pool water shall be maintained greater than or equal to 2500 ppm.

APPLICABILITY: Whenever one or more fuel assemblies are stored in the spent fuel pool racks.

ACTION:

a. With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of fuel assemblies in the spent fuel storage pool and initiate action to restore the boron concentration in the spent fuel pool to greater than or equal to 2500 ppm.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.13 The boron concentration of the spent fuel pool shall be determined by chemical analysis ~~at least once per 7 days.~~ INSERT 1

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of control rod worth and SHUTDOWN MARGIN provided reactivity equivalent to at least the highest estimated control rod worth is available for trip insertion from OPERABLE control rod(s).

APPLICABILITY: MODE 2.

ACTION:

a. With any full-length control rod not fully inserted and with less than the above reactivity equivalent available for trip insertion, initiate boration within 15 minutes and continue boration until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

b. With all full-length control rods fully inserted and the reactor subcritical by less than the above reactivity equivalent, initiate boration within 15 minutes and continue boration until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length control rod either partially or fully withdrawn shall be determined ~~at least once per 2 hours~~.

INSERT 1

4.10.1.2 Each full-length control rod not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The group height, insertion, and power distribution limits of Specifications 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.1, and 3.2.4 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER is maintained less than or equal to 85% of RATED THERMAL POWER, and

b. The limits of Specifications 3.2.2 and 3.2.3 are maintained and determined at the frequencies specified in Specification 4.10.2.2 below.

APPLICABILITY: MODE 1.

ACTION:

With any of the limits of Specification 3.2.2 or 3.2.3 being exceeded while the requirements of Specifications 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.1, and 3.2.4 are suspended, either:

a. Reduce THERMAL POWER sufficient to satisfy the ACTION requirements of Specifications 3.2.2 and 3.2.3, or

b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined to be less than or equal to 85% of RATED THERMAL POWER ~~at least once per hour~~ during PHYSICS TESTS.

INSERT 1

4.10.2.2 The requirements of the below listed specifications shall be performed ~~at least once per 12 hours~~ during PHYSICS TESTS:

a. Specifications 4.2.2.2 and 4.2.2.3, and

b. Specification 4.2.3.2.

SPECIAL TEST EXCEPTIONS

3/4.10.3 PHYSICS TESTS

LIMITING CONDITION FOR OPERATION

3.10.3 The limitations of Specifications 3.1.1.3, 3.1.1.4, 3.1.3.1, 3.1.3.5, and 3.1.3.6 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER,

b. The Reactor Trip Setpoints on the OPERABLE Intermediate and Power Range channels are set at less than or equal to 25% of RATED THERMAL POWER, and

c. The Reactor Coolant System lowest operating loop temperature (T_{avg}) is greater than or equal to 551°F.

APPLICABILITY: MODE 2.

ACTION:

a. With the THERMAL POWER greater than 5% of RATED THERMAL POWER, immediately open the Reactor trip breakers.

b. With a Reactor Coolant System operating loop temperature (T_{avg}) less than 551°F, restore T_{avg} to within its limit within 15 minutes or be in at least HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.10.3.1 The THERMAL POWER shall be determined to be less than or equal to 5% of RATED THERMAL POWER ~~at least once per hour~~ during PHYSICS TESTS.

4.10.3.2 Each Intermediate and Power Range channel shall be subjected to an ANALOG CHANNEL OPERATIONAL TEST within 12 hours prior to initiating PHYSICS TESTS.

4.10.3.3 The Reactor Coolant System temperature (T_{avg}) shall be determined to be greater than or equal to 551°F ~~at least once per 30 minutes~~ during PHYSICS TESTS.

INSERT 1

SPECIAL TEST EXCEPTIONS

3/4.10.4 REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

3.10.4 The limitations of Specification 3.4.1.1 may be suspended during the performance of STARTUP and PHYSICS TESTS provided:

a. The THERMAL POWER does not exceed the P-7 Interlock Setpoint, and

b. The Reactor Trip Setpoints on the OPERABLE Intermediate and Power Range channels are set less than or equal to 25% of RATED THERMAL POWER.

APPLICABILITY: During operation below the P-7 Interlock Setpoint.

ACTION:

With the THERMAL POWER greater than the P-7 Interlock Setpoint, immediately open the Reactor trip breakers.

SURVEILLANCE REQUIREMENTS

4.10.4.1 The THERMAL POWER shall be determined to be less than P-7 Interlock Setpoint ~~at least once per hour~~ INSERT 1 during STARTUP and PHYSICS TESTS.

4.10.4.2 Each Intermediate and Power Range channel, and P-7 Interlock shall be subjected to an ANALOG CHANNEL OPERATIONAL TEST within 12 hours prior to initiating STARTUP and PHYSICS TESTS.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

LIQUID HOLDUP TANKS*

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each unprotected outdoor tank shall be limited to less than or equal to 10 Curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any unprotected outdoor tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Annual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.4.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each unprotected outdoor tank shall be determined to be within the above limit by analyzing a representative sample of the tank's contents ~~at least once per 7 days~~ when radioactive materials are being added to the tank. INSERT

*Tanks included in this specification are those outdoor tanks that are either not surrounded by liners, dikes, or walls capable of holding the tank contents or that do not have tank overflows and surrounding area drains connected to the Liquid Waste Processing System.

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 1.0 x 10^5 Curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Annual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.4.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit ~~at least once per 24 hours~~ when radioactive materials are being added to the ~~tank.~~ INSERT 1

6.8.3.o (continued)

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary-to-secondary leakage.

p. Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, which includes the following:

1) Actions to restore battery cells discovered with float voltage < 2.13 V;

2) Actions to equalize and test battery cells found with electrolyte level below the top of the plates;

3) Actions to verify that the remaining cells are > 2.07 V when a cell or cells are found to be < 2.13 V; AND

4) Actions to ensure that specific gravity readings are taken prior to each discharge test.

INSERT 6

INSERTS FOR TECHNICAL SPECIFICATION BASES CHANGES

INSERT 1

at a frequency found in the Surveillance Frequency Control Program

INSERT 2

frequency specified in the Surveillance Frequency Control Program

ENCLOSURE, ATTACHMENT 2

TS Bases Page Markups List of Effected Pages

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3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that: (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of rod misalignment on associated accident analyses are limited. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits. Verification that the Digital Rod Position Indicator agrees with the demanded position within $\pm$ 12 steps at 24, 48, 120, and 259 steps withdrawn for the Control Banks and 18, 234, and 259 steps withdrawn for the Shutdown Banks provides assurances that the Digital Rod Position Indicator is operating correctly over the full range of indication. Since the Digital Rod Position Indication System does not indicate the actual shutdown rod position between 18 steps and 234 steps, only points in the indicated ranges are picked for verification of agreement with demanded position.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors and a restriction in THERMAL POWER. These restrictions provide assurance of fuel rod integrity during continued operation. In addition, those safety analyses affected by a misaligned rod are reevaluated to confirm that the results remain valid during future-operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the safety analyses. Measurement with T_{avg} greater than or equal to 561°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a Reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis ~~of once per 12 hours~~ with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCOs are satisfied.

INSERT 1

3/4.2.5 DNB PARAMETERS (continued)

The value for thermal design RCS flow rate presented in Technical Specification 3.2.5 is an analytical limit. The minimum thermal design RCS flow rate is 392,000 gpm. To provide additional operating margin, a higher value for thermal design flow rate may be used if supported by cycle specific analysis. The minimum measured flow in the Core Operating Limits Report is the thermal design flow rate assumed for a particular cycle plus RCS flow measurement uncertainties. The RCS flow measurement uncertainty is 2.8% using the precision heat balance method or 2.1% using the elbow tap methods described in WCAP 15287, "RCS Flow Measurement for the South Texas Projects Using Elbow Tap Methodology", dated August, 1999. The elbow tap Dp measurement uncertainty presumes that elbow tap Dp measurements are obtained from either QDPS or the plant process computer. Based on instrument uncertainty assumptions, RCS flow measurements using either the precision heat balance or the elbow tap Dp measurement methods are to be performed at greater than or equal to 90% RTP at the beginning of a new fuel cycle.

delete INSERT 1

The ~~12 hour periodic~~ surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation.

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip System and the Engineered Safety Features Actuation System instrumentation and interlocks ensures that: (1) the associated ACTION and/or Reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its Setpoint, (2) the specified coincidence logic is maintained, (3) sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance, and (4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the safety analyses. The Surveillance Requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," supplements to that report, WCAP-14333-P-A, Rev. 1, "Probabilistic Risk Analysis of the RPS and ESFAS Test Times and Completion Times," and the South Texas Project probabilistic safety assessment (PSA). Surveillance intervals and out of service times were determined based on maintaining an appropriate level of reliability of the Reactor Protection System instrumentation.

delete

The ~~18 month~~ slave relay test interval is based on information contained in WCAP-13878, Rev. 1, "Reliability Assessment of Potter & Brumfield MDR Series Relays." These assessments set conditions and provide guidance for maintaining the reliability necessary to continue ~~18 month~~ testing. INSERT 1

delete

ACTION 4 of Table 3.3-1 is modified to indicate that normal plant control operations that individually add limited positive reactivity (e.g., temperature or boron fluctuations associated with RCS inventory management or temperature control) are not precluded by this Action, provided they are accounted for in the calculated SHUTDOWN MARGIN required by Technical Specifications. Introduction of coolant inventory must be from sources that have a boron concentration greater than what would be required in the RCS for minimum SHUTDOWN MARGIN. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes must also be evaluated to ensure they do not result in a loss of SHUTDOWN MARGIN. Control rod withdrawal is not allowed.

ACTION 5 of Table 3.3-1 for the Extended Range Neutron Flux Instrumentation is similar to ACTION 4 for the Source Range Instrumentation. The Action indicates that normal plant control operations that individually add limited positive reactivity (e.g., temperature or boron fluctuations associated with RCS inventory management or temperature control) are not precluded by this Action, provided they are accounted for in the calculated SHUTDOWN MARGIN required by Technical Specifications. Introduction of coolant inventory must be from sources that have a boron concentration greater than that required in the RCS for minimum SHUTDOWN MARGIN or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive Moderator Temperature Coefficient must also be evaluated to ensure they do not result in a loss of SHUTDOWN MARGIN. Control Rod withdrawal is not allowed.

The Action is modified by a note that states that separate condition entry is allowed for each function. The allowed outage time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

SURVEILLANCE REQUIREMENTS

INSERT 1

SR 4.3.3.5.1 requires performance of a CHANNEL CHECK ~~once every 31 days~~ to ensure that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels.

INSERT 2

As specified in the Surveillance, a CHANNEL CHECK is only required for those channels, which are normally energized. The ~~Frequency of 31 days~~ is based upon operating experience, which demonstrates that channel failure is rare. The provision to limit the channel check in SR 4.3.3.5.1 to normally energized instrumentation is included because it is accepted in the Standard TS NUREG-1431. None of the STP remote shutdown instrumentation is normally de-energized. The provision is retained to provide flexibility for any future design change that would replace an instrument that is normally energized with one that is not.

SR 4.3.3.5.2 verifies each required Remote Shutdown System control circuit and transfer switch performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the unit can be placed and maintained in MODE 3 from the remote shutdown panel and the local control stations. The ~~18 month Frequency~~ is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. (However, this Surveillance is not required to be performed only during a unit outage.) Operating experience demonstrates that remote shutdown control channels usually pass the Surveillance test when performed ~~at the 18 month Frequency~~. INSERT 1

SR 4.3.3.5.3 requires a CHANNEL CALIBRATION, which is a complete check of the instrument loop and the sensor. The ~~Frequency of 18 months~~ is based upon operating experience and consistency with the typical industry refueling cycle.

INSERT 2

3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION (Continued)

ACTION 40.a. requires restoration within 30 days if a channel of steam line radiation monitoring or steam generator blowdown line radiation monitoring is inoperable, provided there is functional diverse channel. If the channel cannot be restored in the 30 days, a report must be submitted to the NRC outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channel to OPERABLE status. The steam line radiation monitor and the steam generator blowdown radiation monitor are considered to be functionally redundant to one another. The allowed outage time and required action are acceptable based on operating experience, the low likelihood of an event requiring the function, the available functionally redundant channel, and the pre-planned actions defined before loss of function.

ACTION 40.b. requires restoration within 7 days if a channel of steam line radiation monitoring or steam generator blowdown line radiation monitoring is inoperable, and there is no functional diverse channel. If the channel cannot be restored in the 7 days, a report must be submitted to the NRC. The allowed outage time of 7 days is based on the relatively low probability of an event requiring instrument operation and the availability of alternate means to obtain the required information. Prompt restoration of the channel is expected because the alternate indications may not fully meet all performance qualification requirements applied to the instrumentation. Therefore, requiring restoration of one inoperable channel of the function limits the risk that the function will be in a degraded condition should an accident occur.

STP's procedure for monitoring primary to secondary leakage is the pre-planned alternate method that will be implemented for this ACTION.

3/4.3.3.7 NOT USED
3/4.3.3.8 NOT USED
3/4.3.3.9 NOT USED
3/4.3.3.10 NOT USED
3/4.3.3.11 NOT USED
3/4.3.4 NOT USED

3/4.3.5 ATMOSPHERIC STEAM RELIEF VALVE INSTRUMENTATION

The atmospheric steam relief valve manual controls must be OPERABLE in Modes 1, 2, 3, and 4 (Mode 4 when steam generators are being used for decay heat removal) to allow operator action needed for decay heat removal and safe cooldown in accordance with Branch Technical Position RSB 5-1.

The atmospheric steam relief valve automatic controls must be OPERABLE with a nominal setpoint of 1225 psig in Modes 1 and 2 because the safety analysis assumes automatic operation of the atmospheric steam relief valves with a nominal setpoint of 1225 psig with uncertainties for mitigation of the small break LOCA. In order to support startup and shutdown activities (including post-refueling low power physics testing), the atmospheric steam relief valves may be operated in manual and open, or in automatic operation, in Mode 2 to maintain the secondary side pressure at or below an indicated steam generator pressure of 1225 psig.

The uncertainties in the safety analysis assume a channel calibration on each atmospheric steam relief valve automatic actuation channel, including verification of automatic actuation at the nominal 1225 psig setpoint, ~~every 18 months~~ <INSERT 1

REACTOR COOLANT LOOPS and COOLANT CIRCULATION (continued)

APPLICABILITY

In MODE 5 with the loops not filled, this LCO is applicable to prevent an inadvertent boron dilution event by ensuring isolation of all sources of unborated water to the RCS.

ACTIONS

The ACTIONS section allows separate ACTION entry for each unsecured unborated water source isolation valve or mechanical joint used for isolation.

Continuation of reactivity control activities is contingent upon maintaining the unit in compliance with this LCO. With any valve or mechanical joint used to isolate unborated water sources not secured in the closed position, all operations involving that could reduce the boron concentration of the RCS below the SHUTDOWN MARGIN must be suspended immediately. The Completion Time of "immediately" for performance of the required action shall not preclude completion of movement of a component to a safe position.

The required action to confirm the boron concentration is within limit is required to be completed whenever ACTION c. is entered.

Preventing inadvertent dilution of the reactor coolant boron concentration is dependent on maintaining the unborated water isolation devices secured closed. Securing the valves or mechanical joints in the closed position ensures that the devices cannot be inadvertently opened. The Completion Time of "immediately" requires an operator to initiate actions to close an open valve or mechanical joint and secure the isolation device in the closed position immediately. Once actions are initiated, they must be continued until the devices are secured in the closed position.

Due to the potential of having diluted the boron concentration of the reactor coolant, verification of boron concentration must be performed whenever ACTION c is entered to demonstrate that the required boron concentration exists. The Completion Time of 4 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration.

SURVEILLANCE REQUIREMENTS

SR 4.4.1.4.2.2 These valves or mechanical joints are to be secured closed to isolate possible dilution paths. The likelihood of a significant reduction in the boron concentration during MODE 5 with the loops not filled is remote due to the fact that all unborated water sources are isolated, precluding a dilution. This Surveillance demonstrates that the devices are closed through a system walkdown.

INSERT 2

The ~~31-day Frequency~~ is based on engineering judgment and is considered reasonable in view of other administrative controls that will ensure that the device opening is an unlikely possibility.

REFERENCES

1. UFSAR, Section 15.4.6
2. NUREG-0800, Section 15.4.6

3/4.4.2 SAFETY VALVES

The pressurizer Code safety valves operate to prevent the RCS from being pressurized above its Safety Limit of 2735 psig. Each safety valve is designed to relieve 504,950 lbs. per hour of saturated steam at the valve setpoint of 2500 psia.

SAFETY VALVES (Continued)

During Modes 1, 2, and 3, all pressurizer Code safety valves must be OPERABLE to prevent the RCS from being pressurized above its Safety Limit of 2735 psig. The combined relief capacity of all of these valves is greater than the maximum surge rate resulting from a complete loss-of-load assuming no Reactor trip until the first Reactor Trip System Trip Setpoint is reached (i.e., no credit is taken for a direct Reactor trip on the turbine trip resulting from loss-of-load) and also assuming no operation of the power operated relief valves or steam dump valves.

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

3/4.4.3 PRESSURIZER INSERT 1

delete

The ~~12-hour periodic~~ surveillance is sufficient to ensure that the parameter is restored to within its limit following expected transient operation. The maximum water volume also ensures that a steam bubble is formed and thus the RCS is not a hydraulically solid system. The requirement that a minimum number of pressurizer heaters be OPERABLE enhances the capability of the plant to control Reactor Coolant System pressure and establish natural circulation. The need to maintain subcooling in the long term during loss of offsite power, as indicated in NUREG-0737, is the reason for providing an LCO. The heaters have an automatic actuation feature for pressure control. The accident analysis conservatively considers the potential adverse effects of this feature. However, automatic actuation is not credited for mitigation in the accident analysis and is not required for operability.

3/4.4.4. RELIEF VALVES

The power-operated relief valves (PORVs) and steam bubble function to relief RCS pressure during all design transients up to and including the design step load decrease with steam dump. Operation of the PORVs minimizes the undesirable opening of the spring-loaded pressurizer Code safety valves. Each PORV has a remotely operated block valve to provide a positive shutoff capability should a relief valve become inoperable.

The OPERABILITY of the PORVs and block valves is determined on the basis of their being capable of performing the following functions:

A. Manual control of PORVs is used to control reactor coolant system pressure. This is a function that is used for the steam generator tube rupture accident and for plant shutdown. Manual control of PORVs is a safety related function.

B. Maintaining the integrity of the reactor coolant pressure boundary. This is a function that is related to controlling identified leakage and ensuring the ability to detect unidentified reactor coolant pressure boundary leakage.

3/4.4.6.2 OPERATIONAL LEAKAGE (Continued)

The Note in 4.4.6.2.1 states that this Surveillance Requirement is not applicable to primary-to-secondary leakage. This is because leakage of 150 gpd cannot be measured accurately by a RCS water inventory balance.

INSERT 2

The ~~72-hour frequency~~ is a reasonable interval to trend leakage and recognizes the importance of early leakage detection in the prevention of accidents.

4.4.6.2.2 The Surveillance Requirements for Reactor Coolant System Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valve is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

4.4.6.2.3 This Surveillance Requirement verifies that primary-to-secondary leakage is less than or equal to 150 gpd through any one steam generator. Satisfying the primary-to-secondary leakage limit ensures that the operational leakage performance criterion in the Steam Generator Program is met. If this Surveillance Requirement is not met, compliance with LCO 3.4.5 should be evaluated. The 150-gpd limit is measured at room temperature as described in Reference 1. The operational leakage rate limit applies to leakage through any one steam generator. If it is not practical to assign the leakage to an individual steam generator, all the primary-to-secondary leakage should be conservatively assumed to be from one steam generator.

The Surveillance Requirement is modified by a Note, which states that the Surveillance is not required to be performed until 12 hours after establishment of steady state operation. For Reactor Coolant System primary-to-secondary leakage determination, steady state is defined as stable Reactor Coolant System pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and reactor coolant pump seal injection and return flows.

INSERT 2

The ~~frequency of 72 hours~~ is a reasonable interval to trend primary-to-secondary leakage and recognizes the importance of early leakage detection in the prevention of accidents. During normal operation the primary-to-secondary leakage is determined using continuous process radiation monitors or radiochemical grab sampling. In MODES 3 and 4, the primary system radioactivity level may be very low, making it difficult to measure primary-to-secondary leakage. Leakage verification is provided by chemistry procedures that provide alternate means of calculating and confirming primary-to-secondary leakage is less than or equal to 150 gpd through any one SG (Ref. 2).

References

1. NEI 97-06, "Steam Generator Program Guidelines"

2. EPRI TR-104788, "Pressurized Water Reactor Primary-to-Secondary Leak Guidelines"

3/4.4.7 NOT USED

3/4.5.1 ACCUMULATORS

The OPERABILITY of each Reactor Coolant System (RCS) accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core through three cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

If one accumulator is inoperable for a reason other than boron concentration, the accumulator must be returned to OPERABLE status within 24 hours. In this Condition, the required contents of two accumulators cannot be assumed to reach the core during a LOCA. The 24 hours is a risk-informed Completion Time that minimizes the potential for exposure of the plant to a LOCA under these conditions.

If the boron concentration of one accumulator is not within limits, it must be returned to within the limits within 72 hours. In this Condition, ability to maintain subcriticality or minimum boron precipitation time may be reduced. The boron in the accumulators contributes to the assumption that the combined ECCS water in the partially recovered core during the early reflooding phase of a large break LOCA is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood. Boiling of ECCS water in the core during reflood concentrates boron in the saturated liquid that remains in the core. In addition, current analysis techniques demonstrate that the accumulators do not discharge following a large main steam line break for the majority of plants. Even if they do discharge, their impact is minor and not a design limiting event. Thus, 72 hours is allowed to return the boron concentration to within limits.

The surveillance limits on accumulator volume represent a spread about an average value used in the safety analysis and have been demonstrated by sensitivity studies to vary the peak clad temperature by less than 20°F. The surveillance limit on accumulator pressure ensures that the assumptions used for accumulator injection in the safety analysis are met.

INSERT 1 The boron concentration should be verified to be within required limits for each accumulator ~~every 31 days~~ since the static design of the accumulators limits the ways in which the concentration can be changed. The ~~31 day Frequency~~ INSERT 2 is adequate to identify changes that could occur from mechanisms such as stratification or inleakage. Sampling the affected accumulator within 6 hours after a 1% volume increase will identify whether inleakage has caused a reduction in boron concentration to below the required limit. It is not necessary to verify boron concentration if the added water inventory is from the refueling water storage tank (RWST), because the water contained in the RWST is within the accumulator boron concentration requirements

3/4.5.1 ACCUMULATORS (Continued)

INSERT 1

Verification ~~every 31 days~~ that power is removed from each accumulator isolation valve operator when the pressurizer pressure is ≥1000 psig ensures that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve. If this were to occur, only one accumulator would be available for injection given a single failure coincident with a LOCA. Since power is removed under administrative control, the ~~31 day Frequency~~ will provide adequate assurance that power is removed.

INSERT 2

This SR allows power to be supplied to the motor operated isolation valves when pressurizer pressure is < 1000 psig, thus allowing operational flexibility by avoiding unnecessary delays to manipulate the breakers during plant startups or shutdowns.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of three independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Each subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. One ECCS is assumed to discharge completely through the postulated break in the RCS loop. Thus, three trains are required to satisfy the single failure criterion. Note that the centrifugal charging pumps are not part of ECCS and that the RHR pumps are not used in the injection phase of the ECCS. Each ECCS subsystem and the RHR pumps and heat exchanges provide long-term core cooling capability in the recirculation mode during the accident recovery period.

When the RCS temperature is below 350°F, the ECCS requirements are balanced between the limitations imposed by the low temperature overpressure protection and the requirements necessary to mitigate the consequences of a LOCA below 350°F. At these temperatures, single failure considerations are not required because of the stable reactivity condition of the reactor and the limited core cooling requirements. Only a single Low Head Safety Injection pump is required to mitigate the effects of a large-break LOCA in this mode. However, two are provided to accommodate the possibility that the break occurs in a loop containing one of the Low Head pumps. Low Head Safety Injection pumps are not required inoperable below 350°F because their shutoff head is too low to impact the low temperature overpressure protection limits.

Below 200° F (MODE 5) no ECCS pumps are required, so the High Head Safety Injection pumps are locked out to prevent cold overpressure.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 ESSENTIAL COOLING WATER SYSTEM

The OPERABILITY of the Essential Cooling Water (ECW) System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The ECW self-cleaning strainer must be in service and functional in order for the respective ECW train to be OPERABLE. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

When a risk-important system or component (for example ECW) is taken out of service, it is important to assure that the impact on plant risk of this and other equipment simultaneously taken out of service is assessed. The Configuration Risk Management Program evaluates the impact on plant risk of equipment out of service. A brief description of the Configuration Risk Management Program is in Section 6.8.3 (administration section) of the Technical Specifications.

The extended allowed outage time (EAOT) of 7 days for one inoperable ECW loop is based on establishing compensatory measures that are consistent with the Configuration Risk Management Program and are controlled by plant procedures to offset the risk impacts of entering the EAOT. Refer to the Bases for 3.8.1.1 Action b for further details.

SURVEILLANCE REQUIREMENTS

SR 4.7.4.a

Verifying the correct alignment for manual, power operated, and automatic valves in the ECW flow path provides assurance that the proper flow paths exist for ECW operation. This SR applies to valves that assure ECW flow to required safety related equipment (to CCW heat exchangers, Standby Diesel Generators, Essential Chillers, and CCW Pump Supplemental Coolers). This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to being locked, sealed, or secured. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

INSERT 2

The ~~31-day Frequency~~ is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SURVEILLANCE REQUIREMENTS (cont.)

SR 4.7.4.b.1

This SR verifies proper automatic operation of the ECW valves on an actual or simulated actuation signal. The relevant signals for the surveillance are safety-injection and loss of offsite power. The ECW is a normally operating system that cannot be fully actuated as part of normal testing. This SR applies to valves that assure ECW flow to required safety related equipment (to CCW heat exchangers, Standby Diesel Generators, Essential Chillers, and CCW Pump Supplemental Coolers). This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18-month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed ~~at the 18 month Frequency~~. Therefore, the Frequency is acceptable from a reliability standpoint.

INSERT 1

SR 4.7.4.b.2

This SR verifies proper automatic operation of the ECW pumps on an actual or simulated actuation signal. The relevant signals for the surveillance are safety-injection and loss of offsite power. The ECW system is a normally operating system that cannot be fully actuated as part of normal testing during normal operation. The ~~18 month Frequency~~ INSERT 2 is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the ~~18 month Frequency~~ INSERT 2. Therefore, the Frequency is acceptable from a reliability standpoint.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available either: (1) provide normal cooldown of the facility or (2) mitigate the effects of accident conditions within acceptable limits.

Surveillance Requirement 4.7.7.e.3 verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the Control Room HVAC. During the emergency mode of operation, the Control Room HVAC is designed to pressurize the control room to at least 1/8 inch water gauge (in-wg) positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The Control Room HVAC is designed to maintain this positive pressure with two trains at a makeup flow rate of 2000 cfm. The ~~frequency of 18 months~~ is consistent with the guidance provided in NUREG-0800. If the surveillance results are less than 1/8 in-wg and the pressure differential is not positive, the surveillance requirement is considered not met and the appropriate action of TS 3.7.7 must be applied. INSERT 2

The footnote for Technical Specification Surveillance Requirement 4.7.7.e.3 has expired and is no longer applicable.

3/4.7.8 FUEL HANDLING BUILDING EXHAUST AIR SYSTEM

The FHB exhaust air system is comprised of two independent exhaust air filter trains and three exhaust ventilation trains. Each of the three exhaust ventilation trains has a main exhaust fan, an exhaust booster fan, and associated dampers. The main exhaust fans share a common plenum and the exhaust booster fans share a common plenum. An OPERABLE ventilation exhaust train consists of any OPERABLE main exhaust fan, any OPERABLE exhaust booster fan, and appropriate dampers.

The OPERABILITY of the Fuel Handling Building Exhaust Air System ensures that radioactive materials leaking from the ECCS equipment within the FHB following a LOCH are filtered prior to reaching the environment. Operation of the system with the heaters operating for the least 10 continuous hours ~~in a 31 day period~~ is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. INSERT 1

The time limits associated with the ACTIONS to restore an inoperable train to OPERABLE status are consistent with the redundancy and capability of the system and the low probability of a design basis accident while the affected trains) is out of service. The allowed outage time for one train of FHB exhaust ventilation or one exhaust filtration train being inoperable, or a combination of an inoperable exhaust ventilation train and an inoperable exhaust filtration train is 7 days. With more than one inoperable train of either FHB exhaust filtration or FHB exhaust ventilation, or with combinations involving more than one inoperable train of either the exhaust ventilation or the exhaust filtration, the allowed outage time is 12 hours. A limited allowed outage time of 12 hours is allowed for multiple trains to be out of service simultaneously in recognition of the fact that there are common plenums and some maintenance or testing activities required opening or entry into these common plenums. This time is reasonable to diagnose, plan, and possibly repair problems with the boundary or the ventilation system. This is acceptable based on the low probability of a design basis event in that brief allowed outage time and because administrative controls impose compensatory actions that reduce the already small risk associated with being in the ACTION.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

Surveillance Requirements

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with 10 CFR 50, Appendix A, GDC 18. Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The Technical Specification Surveillance Requirements (SRs) for demonstrating the OPERABILITY of the standby diesel generators are in accordance with the recommendations of Regulatory Guide 1.108, Regulatory Guide 1.137, as addressed in the FSAR and NUREG-1431.

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 3744 is 90% of the nominal 4160 V output voltage. This value, which is specified in ANSI C84.1, allows for voltage drop to the terminals of 4000 V motors with minimum operating voltage specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating. The specified maximum steady state output voltage of 4576 V corresponds to the 10% upper limit for the nominal 4160 volts on the safety bus.

The specified minimum and maximum frequencies of the standby diesel generators are 58.8 Hz and 61.2 Hz, respectively. These values are equal to plus or minus 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.108 and NUREG-1431.

SR 4.8.1.1.1.a

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

INSERT 2

SR 4.8.1.1.1.b

Transfer of each 4.16 kV ESF bus power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The ~~18 month Frequency~~ of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that the components usually pass the SR when performed ~~at the 18 month Frequency~~. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. INSERT 1

SR 4.8.1.1.2.a.1

This SR provides verification that the level of fuel oil in the fuel tank is at or above the required level.

A.C. SOURCES, D. C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.a.2

This SR helps to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note (Note 2) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading.

For purposes of this testing, the DGs are started from standby conditions. Standby condition for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. In addition, the modified start may involve reduced fuel (load limit). These start procedures are the intent of Note 3, which is only applicable when such modified start procedures are recommended by the manufacturer.

INSERT 1

~~Once per 184 days~~ the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR.

The 10 second start requirement is not applicable (see Note 3) when a modified start procedure as described above is used.

INSERT 2

The ~~normal 31 day Frequency~~ for SR 4.8.1.1.2.a is consistent with Regulatory Guide 1.108 and Generic Letter 94-01. The ~~184 day Frequency~~ in Note 3 is a reduction in cold testing consistent with Generic Letter 84-15. These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 4.8.1.1.2.a.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. A minimum run time of 60 minutes is required to stabilize engine temperature, while minimizing the time that the DG is connected to the offsite source.

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 6 states that momentary transients, because of changing bus loads, do not invalidate this test.

A successful DG start under SR 4.8.1.1.2.a.2 must precede this test to credit satisfactory performance.

A.C. SOURCES, D. C. SOURCES, AND ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.b

INSERT 1

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil tanks ~~once every 31 days~~ eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137. This SR is for preventative maintenance. The presence of water does not necessarily represent failure of the SR, provided the accumulated water is removed during the performance of this Surveillance.

SR 4.8.1.1.2.c

The requirements will be controlled and administered by the Diesel Fuel Oil Testing Program located in section 6.8.3 of Administrative Controls.

SR 4.8.1.1.2.e.1 NOT USED

SR 4.8.1.1.2.e.2

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load (785.3 kW) without exceeding predetermined voltage and frequency. The ~~18 month Frequency~~ is consistent with the recommendation of Regulatory Guide 1.108. INSERT 2

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 5 allows the diesel start for this surveillance to be a modified start as stated in SR 4.8.1.1.2.a.2.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.3

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide for DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

INSERT 2
The ~~18 month Frequency~~ is consistent with the recommendation of Regulatory Guide 1.108 and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 5 allows the diesel start for this surveillance to be a modified start as stated in SR 4.8.1.1.2.a.2.

SR 4.8.1.1.2.e.4

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency busses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The DG autostart time of 10 seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The frequency should be restored to within 2% of nominal following a load sequence step. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved.

The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

INSERT 2

The ~~Frequency of 18 months~~ is consistent with the recommendations of Regulatory Guide 1.108, paragraph 2.a.(1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

SR 4.8.1.1.2.e.5

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (LOCA signal) and operates ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability.

INSERT 2

The ~~Frequency of 18 months~~ takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths.

SR 4.8.1.1.2.e.6

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the DG operation, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

This surveillance also demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal, and critical protective functions (engine overspeed, generator differential current, and low lube oil pressure) are operable. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

INSERT 2

The ~~Frequency of 18 months~~ takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of 18 months. Operating experience has shown that these components usually pass the SR when performed ~~at the 18 month Frequency~~. INSERT 1 Therefore, the ~~Frequency~~ INSERT 2 was concluded to be acceptable from a reliability standpoint.

SR 4.8.1.1.2.e.7

Regulatory Guide 1.108, paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ 2 hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions.

This Surveillance also demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within 10 seconds. The 10 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The ~~18 month Frequency~~ is consistent with the recommendation of Regulatory Guide 1.108, paragraph 2.a.(5). INSERT 2

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

INSERT 2

The ~~18 month Frequency~~ is consistent with the recommendations of Regulatory Guide 1.108, paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by three Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 5 allows the diesel start for this surveillance to be a modified start as stated in SR 4.8.1.1.2.a.2. Note 6 states that momentary transients, because of changing bus loads, do not invalidate this test.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.8

This SR is used to verify that the loads for the diesel do not exceed the 2000 hour rating approved by Cooper.

SR 4.8.1.1.2.e.9

As required by Regulatory Guide 1.108, paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence times are reset.

The ~~Frequency of 18 months~~ is consistent with the recommendations of Regulatory Guide 1.108, paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance.

INSERT 2

SR 4.8.1.1.2.e.10

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as a result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308, paragraph 6.2.6(2).

The intent in the requirement is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The ~~18 month Frequency~~ is consistent with the recommendation of Regulatory Guide 1.108, paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.1.1.2.e.11

As required by Regulatory Guide 1.108, paragraph 2.a.(2), each DG is required to demonstrate proper operation for the DBA loading sequence to ensure that voltage and frequency are maintained within the required limits. Under accident conditions, prior to connecting the DGs to their respective busses, all loads are shed except load center feeders and those motor control centers that power Class 1E loads (referred to as "permanently connected" loads). Upon reaching 90% of rated voltage and frequency, the DGs are then connected to their respective busses.

Loads are then sequentially connected to the bus by the automatic load sequencer. This sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The 10% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated.

The sequencer is considered a support system for the associated diesel generator and those components actuated by a Mode I signal (CR 00-10707).

INSERT 2

The ~~Frequency of 18 months~~ is consistent with the recommendation of Regulatory Guide 1.108, paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

SR 4.8.1.1.2.e.12

This SR verifies that the diesel will not start when the emergency stop lockout feature is tripped. This prevents any further damage to the diesel engine or generator.

SR 4.8.1.1.2.e.13

This SR verifies the requirements of Branch Technical Position PSB-1 that the load shedding scheme automatically prevents load shedding during the sequencing of the emergency loads to the bus. It also verifies the reinstatement of the load shedding feature upon completion of the load sequencing action.

SR 4.8.1.1.2.f

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

INSERT 2

The ~~10 year Frequency~~ is consistent with the recommendations of Regulatory Guide 1.108, paragraph 2.b, and Regulatory Guide 1.137, paragraph C.2.f.

SR 4.8.1.1.2.g

This SR provided assurance that any accumulation of sediment over time or the normal wear on the system has not degraded the diesels.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," Revision 2, December 1979; 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977; and ASTM D975-81, ASTM D1552-79, ASTM D262282, ASTM D4294-83, and ASTM D2276-78. The standby diesel generators auxiliary systems are designed to circulate warm oil and water through the diesel while the diesel is not running, to preclude cold ambient starts. For the purposes of surveillance testing, ambient conditions are considered to be the hot prelube condition.

3.8.1.3

The OPERABILITY of the minimum AC sources during MODE 6 with ≥23' of water in the cavity is based on the following conditions:

a. The unit can be maintained in the shutdown or refueling condition for extended periods;

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

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

operation. Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values, and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates, and compares the battery capacity at that time with the rated capacity.

TS 3.8.2.1 allows the application of the CRMP to extend the two-hour completion time for batteries or battery chargers. It is not appropriate to apply the CRMP to extend the allowed outage time during an ongoing emergent transient condition or where the battery bank is the sole source of power available for the loads on the DC bus. A note has been added to TS 3.8.2.1 to restrict the application of the CRMP for these conditions.

The Surveillance Requirements for demonstrating the OPERABILITY of the station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The seven-day Frequency is conservative with respect to manufacturer recommendations and IEEE-450 (Ref. 9).

SR 4.8.2.1. a

INSERT 1

This action is performed ~~on a nominal seven-day cycle~~ and documents inspection of the battery and battery room condition to the following attributes:

- Charger output current and voltage,
- Pilot cell voltage, specific gravity and temperature (values-recorded)

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage, and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, are characteristic of a charged cell with adequate capacity. The ~~seven-day frequency~~ ~~is~~ conservative with respect to manufacturer, IEEE Std 450-1980 and regulatory guide recommendations. INSERT 2

SR 4.8.2.1.b

INSERT 1

This action is performed on ~~a nominal 92-day cycle~~ and documents measurement of the battery parameters to include the following attributes:

- Voltage and specific gravity of each cell
- Electrolyte temperature of selected representative cells
- Connections are visually inspected and resistance measurement is performed only on a connection that appears to be loose or corroded

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage, and specific gravity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery. The ~~92 day frequency~~ is consistent with manufacturer and regulatory guide recommendations. INSERT 2

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to seven days. During this seven-day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cells specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

SR 4.8.2.1.c.1, 2 & 3

INSERT 1

This action is performed ~~on an 18 month (maximum) cycle~~ and documents inspection of the battery to include the following attributes:

- Detailed visual inspection of each cell, including plate condition
- Detailed visual inspection of battery rack
- Bolted connections cleaned, coated with anti-corrosion material and retorqued
- Resistance of bolted connections measured and recorded

Visual inspection and resistance measurements of inter-cell, inter-rack, inter-tier, and terminal connections provide an indication of physical damage or abnormal deterioration that could indicate degraded battery condition. The anticorrosion material is used to help ensure good electrical connections and to reduce terminal deterioration. The visual inspection for corrosion is not intended to require removal of and inspection under each terminal connection. The removal of visible corrosion is a preventive maintenance SR. The presence of visible corrosion does not necessarily represent a failure of this SR provided visible corrosion is removed during performance of SR. The surveillance ~~frequency of 18 months~~ INSERT 2 exceeds the IEEE-450 recommendation of 12 months, and is consistent with extension of the refuel cycle to 18 months.

SR 4.8.2.1.c.4

INSERT 1

This action is performed ~~on an 18 month (maximum) cycle~~ and documents the capability of the battery charger to supply rated current at 125 V for a period of eight hours. The battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied. The surveillance frequency is acceptable, and is intended to be consistent with the expected fuel cycle lengths.

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

SR 4.8.2. 1. d

A battery service test is a special test of battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements. The surveillance ~~frequency of 18 months~~ INSERT 2 is consistent with the recommendations of Regulatory Guide 1.129, which state that the battery service test should be performed during refueling operations, or at some other outage, with intervals between tests not to exceed 18 months.

SR 4.8.2. 1. e

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the "as found" condition, after having been in service, to detect any change in the capacity determined by the acceptance test. This test is intended to determine overall battery degradation due to age and usage. A performance discharge test is allowed in lieu of a service test ~~once per 60 months.~~ INSERT 1

SR 4.8.2. I.f

The performance discharge test surveillance frequency for this test is ~~normally 60 months.~~ If the battery has reached 85% of its expected life, or if the battery capacity has decreased by 10 percent or more of the manufacturer's rating, the surveillance frequency is reduced ~~to 18 months~~ because the test must be performed during the refueling operations. The ~~18 month interval~~ exceeds the IEEE-450 recommendation.

INSERT 2

INSERT 1

INSERT 1

3/4.9.1 BORON CONCENTRATION (Continued)

APPLICABILITY

In MODE 6, this LCO is applicable to prevent an inadvertent boron dilution event by ensuring isolation of all sources of unborated water to the RCS.

ACTIONS

The ACTIONS are modified to allow separate ACTION entry for each unborated water source isolation valve.

Continuation of CORE ALTERATIONS is contingent upon maintaining the unit in compliance with this LCO. With any valve or mechanical joint required to isolate unborated water sources not secured in the closed position, all operations involving CORE ALTERATIONS must be suspended immediately. The Completion Time of "immediately" for performance the required action shall not preclude completion of movement of a component to a safe position.

ACTION b. includes a requirement that the verification that boron concentration is within limit be completed whenever ACTION b. is entered.

Preventing inadvertent dilution of the reactor coolant boron concentration is dependent on maintaining the unborated water isolation devices secured closed. Securing the valves or mechanical joints in the closed position ensures that the devices cannot be inadvertently opened. The Completion Time of "immediately" requires an operator to initiate actions to close an open valve or mechanical joint and secure the isolation device in the closed position immediately. Once actions are initiated, they must be continued until the devices are secured in the closed position.

Due to the potential of having diluted the boron concentration of the reactor coolant, verification of boron concentration per SR 4.9.1.2 must be performed whenever ACTION b. is entered to demonstrate that the required boron concentration exists. The Completion Time of 4 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration.

SURVEILLANCE REQUIREMENTS

INSERT 1

SR 4.9.1.3 These valves or mechanical joints are to be secured closed to isolate possible dilution paths. The likelihood of a significant reduction in the boron concentration during MODE 6 operations is remote due to the large mass of borated water in the refueling cavity and the fact that all unborated water sources are isolated, precluding a dilution. The boron concentration is checked ~~every 72 hours~~ during MODE 6 under SR 4.9.1.2. This Surveillance demonstrates that the devices are closed through a system walkdown. The ~~31 day Frequency~~ is based on engineering judgment and is considered reasonable in view of other administrative controls that will ensure that the valve opening is an unlikely possibility.

INSERT 2

REFERENCES

1. UFSAR, Section 15.4.6
2. NUREG-0800, Section 15.4.6

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (continued)

The equipment hatch may also be open during CORE ALTERATIONS when specific limitations are satisfied. The specification requires: (1) the reactor has been subcritical for ≥165 hours and, (2) the equipment hatch (if open) is capable of being closed following a fuel handling accident inside containment. The following administrative requirements will apply whenever the equipment hatch is open during core alterations or the movement of irradiated fuel in containment:

1. Appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERATIONS

2. Specified individuals are designated and readily available to close the equipment hatch following an evacuation that would occur in the event of a fuel handling accident

3. Obstructions (e.g., cables, hoses, and runway) that would prevent closure of the equipment hatch can be quickly removed.

The containment equipment hatch closure is required to take place upon the occurrence of a fuel handling accident inside containment if the hatch is open. Fuel movement is not permitted with equipment hatch open, if the reactor has not been subcritical for ≥165 hours. Equipment hatch closure should occur as soon as practicable, and is normally assumed to occur in 2 hours. Unlike the airlock, the equipment hatch may be blocked by an obstruction (e.g. the removable equipment hatch runway). Fuel movement is not allowed with the runway installed unless the capability to remove all obstructions and close the hatch within the required time is maintained.

A surveillance requirement verifies that the proper tools are staged at the equipment hatch location and qualified personnel assigned to close the equipment hatch ~~on a seven day frequency~~. These requirements assure that the associated doses are limited to within acceptable levels.

INSERT 1

3/4.9.5 NOT USED

3/4.9.6 NOT USED

3/4.9.7 NOT USED

3/4.9.12 FUEL HANDLING BUILDING EXHAUST AIR SYSTEM

The FHB exhaust air system is comprised of two independent exhaust air filter trains and three exhaust ventilation trains. Each of the three exhaust ventilation trains has a main exhaust fan, an exhaust booster fan, and associated dampers. The main exhaust fans share a common plenum and the exhaust booster fans share a common plenum. An OPERABLE ventilation exhaust train consists of any OPERABLE main exhaust fan, any OPERABLE exhaust booster fan and appropriate OPERABLE dampers.

The limitations on the Fuel Handling Building Exhaust Air System ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating for at least 10 continuous hours ~~in a 31-day period~~ is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. This Specification has been modified by a note that states, at least one FHB exhaust air filter train, one FHB exhaust booster fan, and one FHB main exhaust fan are capable of being powered from an Onsite emergency power source. This note ensures that required FHB exhaust train components will have an emergency power source available, even if the limiting conditions for operation can be satisfied.

INSERT