Southern Nuclear

Regulatory Affairs Director

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NL-23-0889
10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Edwin I. Hatch Nuclear Plant - Units 1 and 2
License Amendment Request to Revise Technical Specifications
to Adopt Risk Informed Completion Times for Residual Heat Removal Service
Water (RHRSW) and Plant Service Water (PSW) Systems

In accordance with the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), Southern Nuclear Operating Company (SNC) is submitting a request for an amendment to the Technical Specifications (TS) for Edwin I. Hatch Nuclear Plant, Units 1 and 2 (HNP) renewed facility operating licenses DPR-57 and NPF-5, respectively.

The proposed amendment would modify TS requirements to permit the use of Risk Informed Completion Times for the condition of one pump inoperable for TS 3.7.1, Residual Heat Removal Service Water (RHRSW) System and for TS 3.7.2, Plant Service Water (PSW) System and Ultimate Heat Sink (UHS). Risk Informed Completion Times were previously incorporated for HNP (ADAMS Accession Nos. ML22297A146 and ML23018A004) in accordance with TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b" (ML18183A493). The proposed amendment would also make corresponding changes to TS 5.5.16, Risk Informed Completion Time Program, and to TS 1.3, Completion Times, Example 1.3-8.

- Attachment 1 provides a description and assessment of the proposed change, the requested confirmation of applicability, and plant-specific verifications.
- Attachment 2 provides the existing TS pages marked up to show the proposed changes.
- Attachment 3 provides the clean TS pages with the proposed changes included.
- Attachment 4 provides existing TS Bases pages marked up to show the proposed changes and is provided for information only.

SNC requests approval of the proposed license amendment 12 months following acceptance. The proposed changes would be implemented within 90 days of issuance of the amendment.

SNC has concluded that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, "Issuance of amendment."

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this license amendment request by transmitting a copy of this letter, with attachments and enclosures, to the designated State Official.

This letter contains no NRC commitments. If you have any questions, please contact Ryan Joyce at 205.992.6468.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on the 6th day of December 2023.

Respectfully submitted,

Jamie Coleman

Jamie M. Coleman
Director, Regulatory Affairs
Southern Nuclear Operating Company

JMC/RMJ

Attachments:
1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Proposed Technical Specification Changes (Clean)
4. Proposed Technical Specification Bases Changes (Mark-Up) - For Information Only

Enclosures:
1. List of Revised Required Actions to Corresponding PRA Functions
2. (Not Used)
3. (Not Used)
4. (Not Used)
5. Baseline CDF and LERF
6. (Not Used)
7. (Not Used)
8. (Not Used)
9. (Not Used)
10. (Not Used)
11. (Not Used)
12. Risk Management Action Examples

cc: Regional Administrator, Region II
NRR Project Manager – Hatch
Senior Resident Inspector – Hatch
Director, Environmental Protection Division – State of Georgia
RType: CHA02.004

Edwin I. Hatch Nuclear Plant - Units 1 and 2
License Amendment Request to Revise Technical Specifications to Adopt Risk Informed Completion Times for Residual Heat Removal Service Water (RHRSW) and Plant Service Water (PSW) Systems

ATTACHMENT 1

DESCRIPTION AND ASSESSMENT

Table of Contents

1.0 DESCRIPTION

The proposed amendment would modify the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2 Technical Specification (TS) requirements related to Completion Times (CTs) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT) for the condition of one pump inoperable for TS 3.7.1, Residual Heat Removal Service Water (RHRSW) System and for TS 3.7.2, Plant Service Water (PSW) System and Ultimate Heat Sink (UHS).

The proposed amendment would also make corresponding changes to TS 5.5.16, Risk Informed Completion Time Program, and to TS 1.3, Completion Times, Example 1.3-8.

The methodology for using the RICT Program is described in NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0-A (ADAMS Accession No. ML12286A322) (hereafter referred to as NEI 06-09-A). Adherence to NEI 06-09-A is required by the RICT Program as specified in TS 5.5.16.

The proposed changes are detailed in Section 2.3 and are further described in Enclosure 1.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

Risk Informed Completion Times were previously incorporated for HNP (ML22297A146 and ML23018A004) in accordance with TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b" (ML18183A493).

Both additional Completion Times would be considered as variations from the TS changes described in TSTF-505, Revision 2. These variations are justified in Enclosure 1, Section 2.0.

2.2 Verifications and Regulatory Commitments

In accordance with Section 4.0, Limitations and Conditions, of the safety evaluation for NEI 06-09-A, the following are provided:

1. Enclosure 1 identifies each of the TS Required Actions to which the RICT Program will apply, with a comparison of the TS functions to the functions modeled in the unit-specific probabilistic risk assessment (PRA) for the structures, systems and components (SSCs) subject to those actions. Enclosure 1 also includes a TSTF-505 cross reference to associated HNP TS which includes additional justifications as requested by TSTF--505.

2. Enclosure 2 is not included and is not applicable since because changes made to the PRA model following the Hatch RICT LAR [ML21300A153] were maintenance items and there are no new PRA methods/upgrades. The current Hatch RICT program already includes both RHRSW and PSW system technical specification LCOs with one pump inoperable in each division (or two inoperable pumps in a given system). This change would add an additional LCO to the program for only one pump inoperable for

a given system. The original Enclosure 2 (which provided a discussion of the results of peer reviews and self-assessments conducted for the plant-specific PRA models) and the unaffected enclosures, were previously submitted [ML21300A153] to support NRC review and issuance of Hatch Amendment Nos. 319 and 264 [ML22297A146] for Units 1 and 2, respectively.

3. Enclosure 3 is not included and is not applicable since each PRA model used for the RICT Program is addressed using a standard endorsed by the Nuclear Regulatory Commission.

4. Enclosure 4 is not included and is not applicable since because the requested change to the RICT program would not exceed the current bounding seismic penalty or impact other external hazards. The full seismic penalty is applied regardless of the length of the RICT, and changes in risk from maintenance configurations are not sensitive to the seismic hazard since the hazard can impact multiple trains simultaneously. Information was previously provided in the original Enclosure 4 of the Hatch RICT LAR [ML21300A153] and RAI Responses [ML22230C465] supported justification of excluding those sources of risk or otherwise bounding them. The current Hatch RICT program already includes both RHRSW and PSW system technical specification LCOs with one pump inoperable in each division (or two inoperable pumps in a given system). This change would add an additional LCO to the program for only one pump inoperable for a given system.

5. Enclosure 5 provides the unit-specific baseline CDF and LERF to confirm that the potential risk increases allowed under the RICT Program are acceptable.

6. Enclosure 6 is not included and is not applicable since the RICT Program is not being applied to shutdown modes.

7. Enclosure 7 is not included and is not applicable since the PRA Model Update Process was reviewed in the TSTF-505 incorporation amendment and the process is not affected by the additional RICTs.

8. Enclosure 8 is not included and is not applicable since the attributes of the real-time model was reviewed in the TSTF-505 incorporation amendment and the process is not affected by the additional RICTs.

9. Enclosure 9 is not included and is not applicable since there are no new key assumptions or sources of uncertainty introduced since the Hatch RICT LAR [ML21300A153]. The current Hatch RICT program already includes both RHRSW and PSW system technical specification LCOs with one pump inoperable in each division (or two inoperable pumps in a given system). This change would add an additional LCO to the program for only one pump inoperable for a given system. Similar to the existing LCOs for these systems that are already in the scope of the RICT program, the key assumptions and sources of uncertainly listed in the original Enclosure 9 of the Hatch RICT LAR [ML21300A153] do not present a significant impact on the new RICTs.

10. Enclosure 10 is not included and is not applicable since the Program Implementation was reviewed in the TSTF-505 incorporation amendment and the process is not affected by the additional RICTs.

11. Enclosure 11 is not included and is not applicable since the Monitoring Program was reviewed in the TSTF-505 incorporation amendment and the program is not affected by the additional RICTs.

12. Enclosure 12 provides a description of the process to identify and provide risk management actions (RMAs).

2.3 Change Requests

Southern Nuclear Operating Company (SNC) is proposing the following new Risk Informed Completion Times and changes consistent with the proposed new Risk Informed Completion Times.

1. SNC proposes to add an optional, additional RICT to TS 3.7.1, Residual Heat Removal Service Water (RHRSW) System, for Condition A, of "One RHRSW pump inoperable." Required Action A.1 currently requires restoration of the inoperable RHRSW pump to operable status within a Completion Time of 30 days. The Completion Time is proposed to be revised to "30 days OR In accordance with the Risk Informed Completion Time Program."

2. SNC proposes to add an optional, additional RICT to TS 3.7.2, Plant Service Water (PSW) System and Ultimate Heat Sink (UHS), for Condition A, of "One PSW pump inoperable." Required Action A.1 currently requires restoration of the inoperable PSW pump to operable status within a Completion Time of 30 days. The Completion Time is proposed to be revised to "30 days OR In accordance with the Risk Informed Completion Time Program."

3. As discussed in Enclosure 1, SNC proposes to add exceptions to the 30 day limit for a RICT as identified in TS 5.5.16, Risk Informed Completion Time Program, which is therein required to be implemented in accordance with NEI 06-09-A, Revision 0. This requirement is proposed to include "with exceptions as noted below." The exceptions to be noted below would be included with item a, "The RICT may not exceed 30 days." Item a would be modified to include

   "except:
   1. The RICT may not exceed 45 days for TS 3.7.1, "RHRSW System," Required Action A.1, and
   2. The RICT may not exceed 45 days for TS 3.7.2, "PSW System and UHS," Required Action A.1."

4. SNC proposes to revise Example 1.3-8 of TS 1.3, Completion Times, to remove the reference to the 30 day RICT limit and replace the "30 days" with "the time limit specified in the RICT Program."

3.0 REGULATORY SAFETY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

Southern Nuclear Operating Company (SNC) has evaluated the proposed change to the TS using the criteria in 10 CFR 50.92 and has determined that the proposed change does not involve a significant hazards consideration.

Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2 requests an amendment to modify the Technical Specification (TS) requirements related to Completion Times (CTs) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT) for the condition of one pump inoperable for TS 3.7.1, Residual Heat Removal Service Water (RHRSW) System and TS 3.7.2, Plant Service Water (PSW) System and Ultimate Heat Sink (UHS).

The proposed amendment would also make corresponding changes to TS 5.5.16, Risk Informed Completion Time Program, and to TS 1.3, Completion Times, Example 1.3-8.

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented 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 permits the extension of Completion Times provided the associated risk is assessed and managed in accordance with the NRC approved Risk-Informed Completion Time Program. The proposed change does not involve a significant increase in the probability of an accident previously evaluated because the change involves no change to the plant or its modes of operation. The proposed change does not increase the consequences of an accident because the design-basis mitigation function of the affected systems is not changed and the consequences of an accident during the extended Completion Time are no different from those during the existing Completion Time.

   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 change the design, configuration, or method of operation of the plant. The proposed change does not involve a physical alteration of the plant (no new or different kind of equipment will be installed).

   Therefore, the proposed change does 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 permits the extension of Completion Times provided risk is assessed and managed in accordance with the NRC approved Risk-Informed Completion Time Program. The proposed change utilizes a previously-approved and implemented risk-informed configuration management program to assure that adequate margins of safety are maintained.

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

Based on the above, SNC concludes that the proposed change 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.

3.2 Conclusion

In conclusion, 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.

4.0 ENVIRONMENTAL CONSIDERATION

The proposed change 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 change 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 change 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 change.

Edwin I. Hatch Nuclear Plant - Units 1 and 2
License Amendment Request to Revise Technical Specifications to Adopt Risk Informed Completion Times for Residual Heat Removal Service Water (RHRSW) and Plant Service Water (PSW) Systems

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Subsystem inoperable.	A.1 Restore Subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed ~~30 days~~ the time limit specified in the RICT Program. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

(continued)

No changes to this page.
Provided for context.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-8 (continued)

If the 7 day Completion Time clock of Condition A has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start.

If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Condition A is exited, and therefore, the Required Actions of Condition B may be terminated.

IMMEDIATE COMPLETION TIME

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

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

OR

In accordance with the Risk Informed Completion Time Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
C. One RHRSW subsystem inoperable for reasons other than Condition A.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System. ---------- C.1 Restore RHRSW subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

(continued)

3.7 PLANT SYSTEMS

3.7.2 Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two PSW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PSW pump inoperable.	A.1 Restore PSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One PSW turbine building isolation valve inoperable.	B.1 Restore PSW turbine building isolation valve to OPERABLE status.	30 days
C. One PSW pump in each subsystem inoperable.	C.1 Restore one PSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. One PSW turbine building isolation valve in each subsystem inoperable.	D.1 Restore one PSW turbine building isolation valve to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

5.5 Programs and Manuals

5.5.15 Battery Monitoring and Maintenance Program (continued)

4. In Regulatory Guide 1.129, Regulatory Position 3, Subsection 5.4.1, "State of Charge Indicator," the following statements in paragraph (d) may be omitted: "When it has been recorded that the charging current has stabilized at the charging voltage for three consecutive hourly measurements, the battery is near full charge. These measurements shall be made after the initially high charging current decreases sharply and the battery voltage rises to approach the charger output voltage."

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration", the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

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

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ 2.13 V when the float voltage of a battery cell has been found to be < 2.13 V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.16 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines~~."~~ The program shall include the following:

," with exceptions as noted below.

a. The RICT may not exceed 30 days~~;~~

b. A RICT may only be utilized in MODE 1;

except:
1. The RICT may not exceed 45 days for TS 3.7.1, "RHRSW System," Required Action A.1; and
2. The RICT may not exceed 45 days for TS 3.7.2, "PSW System and UHS," Required Action A.1.

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No changes to this page.
Provided for context.

5.5.16 Risk Informed Completion Time Program (continued)

c. When a RICT is being used, any change to the plant configuration, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required if the plant configuration change would lower plant risk and would result in a longer RICT.

d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

1. Numerically accounting for increased possibility of CCF in the RICT calculation; or

2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

e. The risk assessment approaches and methods shall be acceptable to the NRC. The plant PRA shall be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant, as specified in Regulatory Guide 1.200, Revision 2. Methods to assess the risk from extending the Completion Times must be PRA methods used to support this license amendment, or other methods approved by the NRC for generic use; and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Restore subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed ~~30 days~~ the time limit specified in the RICT Program. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

(continued)

No changes to this page.
Provided for context.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-8 (continued)

If the 7 day Completion Time clock of Condition A has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start.

If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Condition A is exited, and therefore, the Required Actions of Condition B may be terminated.

IMMEDIATE COMPLETION TIME

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

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

OR

In accordance with the Risk Informed Completion Time Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
C. One RHRSW subsystem inoperable for reasons other than Condition A.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System. ---------- C.1 Restore RHRSW subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

(continued)

3.7 PLANT SYSTEMS

3.7.2 Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two PSW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PSW pump inoperable.	A.1 Restore PSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One PSW turbine building isolation valve inoperable.	B.1 Restore PSW turbine building isolation valve to OPERABLE status.	30 days
C. One PSW pump in each subsystem inoperable.	C.1 Restore one PSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. One PSW turbine building isolation valve in each subsystem inoperable.	D.1 Restore one PSW turbine building isolation valve to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

5.5 Programs and Manuals

5.5.15 Battery Monitoring and Maintenance Program (continued)

4. In Regulatory Guide 1.129, Regulatory Position 3, Subsection 5.4.1, "State of Charge Indicator," the following statements in paragraph (d) may be omitted: "When it has been recorded that the charging current has stabilized at the charging voltage for three consecutive hourly measurements, the battery is near full charge. These measurements shall be made after the initially high charging current decreases sharply and the battery voltage rises to approach the charger output voltage."

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration", the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

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

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ 2.13 V when the float voltage of a battery cell has been found to be < 2.13 V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.16 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines~~.~~" The program shall include the following:

," with exceptions as noted below.

a. The RICT may not exceed 30 days~~;~~

b. A RICT may only be utilized in MODE 1;

except:
1. The RICT may not exceed 45 days for TS 3.7.1, "RHRSW System," Required Action A.1; and
2. The RICT may not exceed 45 days for TS 3.7.2, "PSW System and UHS," Required Action A.1.

(continued)

No changes to this page.
Provided for context.

5.5.16 Risk Informed Completion Time Program (continued)

c. When a RICT is being used, any change to the plant configuration, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required if the plant configuration change would lower plant risk and would result in a longer RICT.

d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

1. Numerically accounting for the increased possibility of CCF in the RICT calculation; or

2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

e. The risk assessment approaches and methods shall be acceptable to the NRC. The plant PRA shall be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant, as specified in Regulatory Guide 1.200, Revision 2. Methods to assess the risk from extending the Completion Times must be PRA methods used to support this license amendment, or other methods approved by the NRC for generic use; and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.

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ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATION CHANGES (CLEAN)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Subsystem inoperable.	A.1 Restore Subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed the time limit specified in the RICT Program. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

(continued)

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One RHRSW subsystem inoperable for reasons other than Condition A.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System. ---------- C.1 Restore RHRSW subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
E. Both RHRSW subsystems inoperable for reasons other than Condition B.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by RHRSW System. ---------- E.1 Restore one RHRSW subsystem to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

3.7 PLANT SYSTEMS

3.7.2 Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two PSW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PSW pump inoperable.	A.1 Restore PSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One PSW turbine building isolation valve inoperable.	B.1 Restore PSW turbine building isolation valve to OPERABLE status.	30 days
C. One PSW pump in each subsystem inoperable.	C.1 Restore one PSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. One PSW turbine building isolation valve in each subsystem inoperable.	D.1 Restore one PSW turbine building isolation valve to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

5.5 Programs and Manuals

5.5.15 Battery Monitoring and Maintenance Program (continued)

4. In Regulatory Guide 1.129, Regulatory Position 3, Subsection 5.4.1, "State of Charge Indicator," the following statements in paragraph (d) may be omitted: "When it has been recorded that the charging current has stabilized at the charging voltage for three consecutive hourly measurements, the battery is near full charge. These measurements shall be made after the initially high charging current decreases sharply and the battery voltage rises to approach the charger output voltage."

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration", the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

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

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ 2.13 V when the float voltage of a battery cell has been found to be < 2.13 V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.16 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines," with exceptions as noted below. The program shall include the following:

a. The RICT may not exceed 30 days except:

1. The RICT may not exceed 45 days for TS 3.7.1, "RHRSW System," Required Action A.1; and

2. The RICT may not exceed 45 days for TS 3.7.2, "PSW System and UHS," Required Action A.1.

b. A RICT may only be utilized in MODE 1;

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Restore subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed the time limit specified in the RICT Program. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

(continued)

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One RHRSW pump in each subsystem inoperable.	B.1 Restore one RHRSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One RHRSW subsystem inoperable for reasons other than Condition A.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System. ---------- C.1 Restore RHRSW subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 ----------NOTE--------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
E. Both RHRSW subsystems inoperable for reasons other than Condition B.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by RHRSW System. ---------- E.1 Restore one RHRSW subsystem to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

3.7 PLANT SYSTEMS

3.7.2 Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two PSW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PSW pump inoperable.	A.1 Restore PSW pump to OPERABLE status.	30 days OR In accordance with the Risk Informed Completion Time Program
B. One PSW turbine building isolation valve inoperable.	B.1 Restore PSW turbine building isolation valve to OPERABLE status.	30 days
C. One PSW pump in each subsystem inoperable.	C.1 Restore one PSW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. One PSW turbine building isolation valve in each subsystem inoperable.	D.1 Restore one PSW turbine building isolation valve to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

5.5 Programs and Manuals

5.5.15 Battery Monitoring and Maintenance Program (continued)

4. In Regulatory Guide 1.129, Regulatory Position 3, Subsection 5.4.1, "State of Charge Indicator," the following statements in paragraph (d) may be omitted: "When it has been recorded that the charging current has stabilized at the charging voltage for three consecutive hourly measurements, the battery is near full charge. These measurements shall be made after the initially high charging current decreases sharply and the battery voltage rises to approach the charger output voltage."

5. In lieu of RG 1.129, Regulatory Position 7, Subsection 7.6, "Restoration", the following may be used: "Following the test, record the float voltage of each cell of the string."

b. The program shall include the following provisions:

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

2. Actions to determine whether the float voltage of the remaining battery cells is ≥ 2.13 V when the float voltage of a battery cell has been found to be < 2.13 V;

3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;

4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and

5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations.

5.5.16 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines," with exceptions as noted below. The program shall include the following:

a. The RICT may not exceed 30 days except:

1. The RICT may not exceed 45 days for TS 3.7.1, "RHRSW System," Required Action A.1; and

2. The RICT may not exceed 45 days for TS 3.7.2, "PSW System and UHS," Required Action A.1.

b. A RICT may only be utilized in MODE 1;

(continued)

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ATTACHMENT 4

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES (MARK-UP)
FOR INFORMATION ONLY

BASES

LCO

b. (continued)

exchangers at the assumed flow rate. Additionally, the RHRSW crosstie valves (which allow the two RHRSW loops to be connected) must be closed so that failure of one subsystem will not affect the OPERABILITY of the other subsystems.

An adequate suction source is not addressed in this LCO since the minimum net positive suction head (59 ft mean sea level in the pump well) is bounded by the plant service water pump requirements [LCO 3.7.2, "Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)"].

APPLICABILITY

In MODES 1, 2, and 3, the RHRSW System is required to be OPERABLE to support the OPERABILITY of the RHR System for primary containment cooling [LCO 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," and LCO 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray"] and decay heat removal [LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown"]. The Applicability is therefore consistent with the requirements of these systems.

The LCO for the RHRSW System is not applicable in MODES 4 and 5. However, portions of the RHRSW System may be required to perform necessary support functions for OPERABILITY of the supported systems. Thus, the LCOs of the RHR Shutdown Cooling System (LCO 3.4.8, "RHR Shutdown Cooling System - Cold Shutdown," LCO 3.9.7, "RHR - High Water Level," and LCO 3.9.8, "RHR - Low Water Level"), which require portions of the RHRSW System to be functional to support RHR Shutdown Cooling System OPERABILITY, will govern RHRSW System requirements during operation in MODES 4 and 5.

or in accordance with the Risk Informed Completion Time Program

ACTIONS

A.1

With one RHRSW pump inoperable, the inoperable pump must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE RHRSW pumps are adequate to perform the RHRSW heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced RHRSW capability. The 30 day Completion Time is based on the remaining RHRSW heat removal capability, including enhanced reliability afforded by manual cross connect capability, and the low probability of a DBA with concurrent worst case single failure.

(continued)

BASES

APPLICABILITY (continued)

The LCO for the PSW System and UHS is not applicable in MODES 4 and 5, and defueled. However, portions of the PSW System and UHS may be required to perform necessary support functions for OPERABILITY of the supported systems. Thus, the LCOs of the individual systems, which require portions of the PSW System and the UHS to be functional to support individual system OPERABILITY, will govern PSW System and UHS requirements during operation in MODES 4 and 5 and defueled.

or in accordance with the Risk Informed Completion Time Program

ACTIONS

A.1

With one PSW pump inoperable, the inoperable pump must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE PSW pumps (even allowing for an additional single failure) are adequate to perform the PSW heat removal function; however, the overall reliability is reduced. The 30 day Completion Time is based on the remaining PSW heat removal capability to accommodate additional single failures, and the low probability of an event occurring during this time period.

B.1

With one PSW turbine building isolation valve inoperable, the inoperable valve must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE PSW turbine building isolation valve in the subsystem is adequate to isolate the non-essential loads, and, even allowing for an additional single failure, the other PSW subsystem is adequate to perform the PSW heat removal function; however, the overall reliability is reduced. The 30 day Completion Time is based on the remaining PSW heat removal capability to accommodate additional single failures, and the low probability of an event occurring during this time period.

(continued)

BASES

LCO

b. (continued)

to be connected) must be closed so that failure of one subsystem will not affect the OPERABILITY of the other subsystems.

An adequate suction source is not addressed in this LCO since the minimum net positive suction head (59 ft mean sea level in the pump well) is bounded by the plant service water pump requirements (LCO 3.7.2, "Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)").

APPLICABILITY

In MODES 1, 2, and 3, the RHRSW System is required to be OPERABLE to support the OPERABILITY of the RHR System for primary containment cooling (LCO 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," and LCO 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray") and decay heat removal (LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown"). The Applicability is therefore consistent with the requirements of these systems.

The LCO for the RHRSW System is not applicable in MODES 4 and 5. However, portions of the RHRSW System may be required to perform necessary support functions for OPERABILITY of the support systems. Thus, the LCOs of the RHR Shutdown Cooling System (LCO 3.4.8, "RHR Shutdown Cooling System - Cold Shutdown," LCO 3.9.7, "RHR - High Water Level," and LCO 3.9.8, "RHR - Low Water Level"), which require portions of the RHRSW System to be functional to support RHR Shutdown Cooling System OPERABILITY, will govern RHRSW System requirements during operation in MODES 4 and 5.

ACTIONS

A.1

or in accordance with the Risk Informed Completion Time Program

With one RHRSW pump inoperable, the inoperable pump must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE RHRSW pumps are adequate to perform the RHRSW heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced RHRSW capability. The 30 day Completion Time is based on the remaining RHRSW heat removal

(continued)

BASES

LCO (continued)

The isolation of the PSW System to components or systems may render those components or systems inoperable, but does not affect the OPERABILITY of the PSW System.

APPLICABILITY

In MODES 1, 2, and 3, the PSW System and UHS are required to be OPERABLE to support OPERABILITY of the equipment serviced by the PSW System. Therefore, the PSW System and UHS are required to be OPERABLE in these MODES.

The LCO for the PSW System and UHS is not applicable in MODES 4 and 5, and defueled. However, portions of the PSW System and UHS may be required to perform necessary support functions for OPERABILITY of the supported systems. Thus, the LCOs of the individual systems, which require portions of the PSW System and the UHS to be functional to support individual system OPERABILITY, will govern PSW System and UHS requirements during operation in MODES 4 and 5 and defueled.

or in accordance with the Risk Informed Completion Time Program

ACTIONS

A.1

With one PSW pump inoperable, the inoperable pump must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE PSW pumps (even allowing for an additional single failure) are adequate to perform the PSW heat removal function; however, the overall reliability is reduced. The 30 day Completion Time is based on the remaining PSW heat removal capability to accommodate additional single failures, and the low probability of an event occurring during this time period.

B.1

With one PSW turbine building isolation valve inoperable, the inoperable valve must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE PSW turbine building isolation valve in the subsystem is adequate to isolate the non-essential loads, and, even allowing for an additional single failure, the other PSW subsystem is adequate to perform the PSW heat removal function; however, the overall reliability is reduced. The 30 day Completion Time is based on the remaining PSW heat removal capability to accommodate additional single failures, and the low probability of an event occurring during this time period.

(continued)

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ENCLOSURE 1

LIST OF REVISED REQUIRED ACTIONS TO CORRESPONDING PRA FUNCTIONS

Table of Contents

1.0 INTRODUCTION

Section 4.0, Item 2 of the NRC's Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09, Revision 0-A (hereafter referred to as "NEI 06-09-A") [ML12286A322], identifies the "Licensees should provide the following plant-specific information in support of their LAR.

(1) The LAR will include proposed changes to the Administrative Controls of Technical Specification (TS) to add a Configuration Risk Management Program (CRMP) in accordance with TR NEI 06-09, Revision 0.

(2) The LAR will provide identification of the TS limiting condition for operations (LCOs) and action requirements to which the Risk Managed Technical Specifications (RMTS) will apply, with a comparison of the TS functions to the PRA modeled functions of the SSCs subject to those LCO actions. The comparison should justify that the scope of the PRA model, including applicable success criteria such as number of SSCs required, flowrate, etc., are consistent licensing basis assumptions (i.e., 10 CFR 50.46 Emergency Core Cooling System [ECCS] flowrates) for each of the TS requirements, or an appropriate disposition or programmatic restriction will be provided.

For (1) above, this program was previously incorporated into the Edwin I. Hatch Nuclear Plant - Units 1 and 2 (HNP) Technical Specifications (TS) (ML22297A146 and ML23018A004). Changes are proposed to the program to allow extended Completion Times for one inoperable pump in the RHRSW and PSW Systems.

For (2) above, this enclosure provides confirmation that the HNP PRA models include the necessary scope of SSCs and their functions to address each proposed application of the Risk-Informed Completion Time (RICT) Program to the proposed scope of TS Conditions, and provides the information requested for Section 4.0, Item 2 of the NRC Safety Evaluation for NEI 06-09-A. The scope of the comparison includes each of the proposed TS Conditions and associated Required Actions to be added to the scope of the RICT Program. The HNP PRA model has the capability to model directly to determine the risk impact of use of the added TS RICT as reflected in Table E1-1.

Table E1-1 lists each TS Condition to which the RICT Program is proposed to be added and documents the following information regarding the TSs with the associated safety analyses, the analogous PRA functions and the results of the comparison. Consistent with the RICT Program described in TS 5.5.16, these additional RICTs are also only applied only in MODE 1. The table also provides any required additional justification for inclusion in the RICT Program scope.

- The columns "Technical Specification (TS)" and "TS Condition" identifies the TS Conditions and Condition statements within the added scope of the RICT Program.
- The column "SSCs Addressed by TS Condition" identifies the SSCs which could lead to entry into the TS Condition.
- The column "SSCs Modeled in PRA" indicates whether the SSCs addressed by the TS Condition are included in the PRA.

- The column “Function Covered by TS Condition” provides a summary of the required functions from the design basis analyses.

- The column “Design Success Criteria” provides a summary of the success criteria from the design basis analyses.

- The column “PRA Success Criteria” identifies the function success criteria modeled in the PRA.

- The column “Other Comments” provides the justification or resolution to address any inconsistencies between the TS and PRA functions regarding the scope of SSCs and the success criteria. Where the PRA scope of SSCs is not consistent with the TS, additional information is provided to describe how the TS Condition can be evaluated using appropriate surrogate events. Differences in the success criteria for TS functions are addressed to demonstrate that the PRA criteria provide a realistic estimate of the risk of the TS Condition as required by NEI 06-09-A.

The corresponding SSCs for each additional TS Condition and the associated TS functions are identified and compared to the PRA. This description also includes the design success criteria and the applicable PRA success criteria. Any differences between the scope or success criteria are identified in Table E1-1. Scope differences are justified by identifying appropriate surrogate events which permit a risk evaluation to be completed using the Configuration Risk Management Program (CRMP) tool. Differences in success criteria typically arise due to the requirement in the PRA standard to make PRAs realistic rather than bounding, whereas design basis criteria are necessarily conservative and bounding. The use of realistic success criteria is necessary to conform to capability Category II of the PRA standard as required by NEI 06-09-A.

For the purposes of the RICT program, the definition for “loss of function” or “loss of safety function” for the subject license amendment request is verbatim from TSTF-505, Revision 2 [ML18183A493]. That is, “a loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power, or no concurrent loss of onsite diesel generators, a safety function assumed in the accident analysis cannot be performed.”

For the purposes of the following information, the terms subsystem, train, loop, and division are considered interchangeable. The TS LCOs for the RHRSW and PSW systems require both subsystems of the system so that the system is capable of performing its specified safety function, even assuming a single failure disables one of the subsystems. The LCO section of the TS Bases for each system defines the specific equipment which constitutes a subsystem for that system.

2.0 TSTF VARIATIONS AND ADDITIONAL JUSTIFICATIONS

Table E1-2 provides a cross reference of the TSTF-505, Revision 2, TS and the HNP TS. Consistent with the RICT Program described in TS 5.5.16, these additional RICTs are also only proposed to be applied only in MODE 1. Variations are denoted within the table. TSTF-505, Revision 2, Table 1, “Conditions Requiring Additional Technical Justification,” contains a list of Required Actions from NUREG-1433, BWR/4 STS [ML12104A192], that may be proposed for inclusion in a RICT Program, but which require additional technical justification to be provided by the licensee.

2.1 System Design

The Residual Heat Removal Service Water System (RHRSW) consists of two independent subsystems. Each subsystem includes a suction source (i.e., the river), two 4000 gpm pumps, header, valves, piping, and heat exchanger. Each pump is approximately 12,000 lbs with a length of 61 feet and each motor is approximately 7600 lbs and 6 feet long.

The safety analyses assume RHRSW availability to support cooling of the suppression pool following a loss of coolant accident. The PRA success criteria identified with Table E1-1 is one RHRSW pump at 4000 gpm and one heat exchanger. The safety analyses results show that one subsystem with two pumps operating at 3750 gpm each (or one pump in each subsystem cross-tied to an available heat exchanger) and up to five percent of tubes plugged in the RHR heat exchanger limits the suppression pool temperature to under 212 degrees Fahrenheit and the primary containment pressure to less than 28 psig. Both parameters are significantly below the design limit of 281 degrees Fahrenheit (F) (Unit 1) and 340 degrees F (Unit 2) and below the pressure design limit 62 psig (both Units 1 and 2).

The Plant Service Water System (PSW) consists of two independent subsystems. Each subsystem includes a suction source (i.e., the river), two 8500 gpm pumps, header, valves, piping, and heat exchanger. Each pump is approximately 12,000 lbs with a length of 61 feet and each motor is approximately 7600 lbs and 6 feet long.

The safety analyses assume PSW availability to support cooling of safety equipment (including the diesel generators, RHR pumps, core spray pumps, and RHRSW pumps) during emergency conditions. The PRA success criteria identified with Table E1-1 is one PSW pump at 2400 gpm and the ultimate heat sink. The safety analyses results show that either subsystem with flow from only one pump provides adequate cooling for the emergency conditions.

2.2 Reason for Change

The RHRSW pumps and motors and PSW pumps and motors are large components located in a Seismic Category I structure that contains a total of sixteen such pumps along with piping, valves, supports, etc. of similar safety importance. Thus, maintenance of these components require utmost care to assure the safety of personnel and integrity of adjacent structures and components. A pump replacement typically takes seven to ten calendar days, working 24 hours per day as conditions permit until work is complete. HNP, being located in the southeast, is prone to severe weather such as thunderstorms which can limit the time maintenance is able to safely work at the river water intake structure. Additionally, some activities can only be performed during daylight hours, so depending on the time of year, this can shorten the available time for certain activities.

When replacing a pump, the motor also must be removed because they are vertically mounted, with the motor being at the top. These are large components with tight clearances and alignment requirements at multiple points and in multiple directions. A number of setbacks can occur when replacing a pump and/or motor, for example:

- During pump replacement (typically 7 – 10 days), it is possible that the pump fails preservice testing, requiring additional troubleshooting and possibly a 2nd replacement pump

    - Depending on conditions, divers may be required for inspection, foreign material searching, etc. [+1 day]
    - Replace with second replacement pump [+7 to 10 days]
    - Additional discoveries during pump replacement (e.g., components out of alignment due to very tight tolerances on the pump seismic restraints and bearings) [+11 days]
    - Unexpected motor problems during post-maintenance testing which require off-site refurbishment by a specialty vendor [+7 to 10 days]
- Preventive maintenance (PM) to replace a pump motor is typically 4-5 days but the following issues may be encountered:
    - Motor / pump alignment issue [+1 day]
    - Replacement pump motor requires offsite services and reinstall [+16 days]
    - Difficulties aligning discharge head with discharge check valve flange [+10 days] (see additional discussion of this in the following paragraph)

With the way the motor, pump, discharge head, and discharge check valve fit together, there can be challenges in getting them to align to specified tolerances. HNP had an experience where the discharge head and check valve required rework of the flanges to get alignment within tolerances. Because of how the motor, pump, and discharge head and check valve are configured and the space available for the load path, the motor has to be removed to facilitate removal of the discharge head and check valve. The opposite is true of the motor – it can't be reinstalled until the pump, discharge head, and discharge check valve are installed to within specified tolerances.

HNP personnel have encountered all of the above setbacks at one time or another, which has resulted in the need for an emergency LAR due to the timing of how the setbacks stacked up. It is not typical to encounter significant issues during these maintenance evolutions. However, when issues arise that necessitate re-work (e.g., replacing a pump, having to remove the replacement, and install another replacement) it can quickly result in approaching or exceeding the 30 day allowed outage time. Around day 20 of a restoration effort (with the potential for additional setbacks), HNP is in the window of needing to consider an exigent or emergency LAR. The timing has recently worked out to where an emergency LAR was necessary because of the time needed to prepare an emergency LAR and receive NRC review.

Due to these complexities associated with RHRSW and PSW pump and motor maintenance activities, SNC has submitted three emergency LARs (as identified below) since 2019 based on the unforeseen maintenance issues encountered. Preparing these emergency LARs (including RAI responses) resulted in an unnecessary diversion of management resources and focus away from the maintenance activities at hand, and unnecessarily cycled the organization to prepare for a TS required plant shutdown.

The recent emergency LAR submittals include:

- During November 2019, Unit 1 RHRSW pump B was replaced and then failed during pre-service testing. SNC replaced that pump with another new pump, which also failed during pre-service testing. SNC submitted an emergency license amendment request [ML19333B967] to allow a one-time extension to the TS 3.7.1 Required Action A.1 Completion Time from 30 days to 45 days. The license amendment request was withdrawn [ML19336B596] after the pump was restored to operable status less than 3 days prior to the original 30-day Completion Time.

- During September 2021, challenges encountered during repair and replacement activities to restore operability to Unit 1 PSW pump C led to the need for an emergency license amendment request [ML21264A003] (and RAI response [ML21266A004]). The approved emergency license amendment [ML21264A644] allowed, with compensatory measures established, a one-time extension of the TS 3.7.2 Required Action A.1 Completion Time from 30 days to 45 days.

- During April 2022, challenges encountered during repair and replacement activities to restore operability to Unit 1 PSW pump A led to SNC submitting an emergency license amendment request [ML22120A087] to, with compensatory measures established, extend the TS 3.7.2 Required Action A.1 Completion Time from 30 days to 45 days. The license amendment request was withdrawn [ML22123A159] after HNP personnel restored the pump to operable condition less than 48 hours prior to the 30-day Completion Time.

2.3 Justification

The current 30-day RICT backstop is administrative limit. There is not a specific technical basis for 30 days in NEI 06-09 other than many nuclear power stations would require up to this time period to complete some required complex maintenance and testing for system function recovery. Maintenance of these motors sometimes take additional time to restore operability. The proposed backstop extension is limited to CTs where need has been demonstrated (TS 3.7.1 and TS 3.7.2 RA A.1) and is of the same duration HNP has requested in emergency LARs.

The previously approved and implemented RICT program permits extended Completion Times provided an evaluation shows an acceptable risk level, and the program includes the administrative limit backstop of 30 days for RICTs. This RICT and the associated program have been adopted based on TSTF-505 by roughly half of the sites with other sites currently under NRC review.

The 30-day backstop is currently applicable to the RICT calculation for HNP TS 3.7.1 and TS 3.7.2 for one pump inoperable in each subsystem (Required Action C.1) consistent with NUREG-1433. The sample RICT calculations indicate that a longer backstop for a single pump inoperable (Required Action A.1) would permit extended Completion Times beyond 30 days while maintaining a similarly acceptable risk level (compared to the existing RICT for one pump inoperable in each subsystem) allowed by Required Action C.1.

The proposed change would allow the Completion Time to be extended to a maximum of a 45-day Completion Time for one pump inoperable in each system. The actual allowed Completion Time would be based on configuration specific considerations in accordance with the RICT program and would not automatically be extended 45 days. The RICT program also calls for risk management actions, and SNC procedures encourage staying within the front stop (i.e., 30 days) when possible. The proposed 45-day backstop on a RICT extension for one pump inoperable in the RHRSW, and for one pump inoperable in the PSW, would permit extended Completion Times beyond 30 days provided an evaluation shows an acceptable risk level, and would reduce the need for emergency amendment activities so that plant focus can be maintained on restoring operability of the pump.

2.4 Precedent

Completion Times greater than thirty days are not prohibited. Some current Technical Specification (TS) examples include:

- Limerick Unit 1 and Unit 2 TS 3.7.1.2, "Emergency Service Water System – Common System," Action a.1 allows 45 days to restore operability when one pump is inoperable (ML052780034 and ML052780037).
- Vogtle Units 1 and 2 TS 3.7.9, "Ultimate Heat Sink (UHS)," Required Action D.2 (restore operability to transfer pump) has a 46-day Completion Time (ML052840233).
- HNP Unit 1 and Unit 2 TS 3.7.3, "Diesel Generator (DG) 1B Standby Service Water (SSW) System," Required Action A.3 has a 60-day completion time for restoration of the DG 1B SSW system to operable status (ML052930172 and ML052930177).
- HNP Unit 1 and Unit 2 TS 3.7.4, "Main Control Room Environmental Control (MCREC) System," Required Action B.3 has a 90-day completion time to restore the control room envelope to operable status (ML052930172 and ML052930177).
- LaSalle Units 1 and 2 TS 3.7.3, "Ultimate Heat Sink (UHS)," Required Action A.1 (restore operability to core standby cooling system pond) has a 90-day Completion Time (ML052990324).
- HNP Unit 1 and Unit 2 TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Required Action I.2 (restore required channels to operable) has a 120-day completion time (ML052930172 and ML052930177).

3.0 INSTRUMENTATION AND CONTROL SYSTEMS REDUNDANCY AND DIVERSITY

Table E1-3 is not included as no changes are requested for Technical Specifications (TS) Section 3.3, Instrumentation, Limiting Conditions for Operation (LCO) Sections.

4.0 EXAMPLES OF CALCULATED RISK INFORMED COMPLETION TIMES

Table E1-4 provides examples of calculated RICTs for each added condition to which the RICT applies (assuming no other SSCs modeled in the PRA are unavailable). The RICTs presented in the table are based on a Unit 1 model calculation except where otherwise noted. Due to the close similarity between the Unit 1 and Unit 2 models, the Unit 1 RICTs not specifically related to electrical power are considered adequate examples for the Unit 2 RICTs. Following Initiative 4b implementation, the actual RICT values will be calculated on a unit-specific basis, using the actual plant configuration and the current revision of the PRA model representing the as-built, as-operated condition of the plant, as required by NEI 06-09-A and TS 5.5.16, Risk Informed Completion Time Program, and the NRC safety evaluation, and may differ from the RICTs presented as examples.

The example calculated RICT values in Table E1-4 are based upon current Internal Events, Internal Flooding, and Fire PRA models, with an added Seismic penalty factor. See the original Enclosure 4 of the Hatch RICT LAR [ML21300A153] and RAI Responses [ML22230C465] for treatment of excluded hazards and a description of how the Seismic penalty factor was derived.

Table E1-1, Mapping of Technical Specification Conditions to PRA Functions

Technical Specification (TS)	TS Condition	SSCs Addressed by TS Condition	SSCs Modeled in PRA	Function Covered by TS Condition	Design Success Criteria	PRA Success Criteria	PRA Comments
3.7.1 Condition A	One RHRSW pump inoperable	Two subsystems of Residual Heat Removal Service Water (RHRSW)	Yes	Remove energy from reactor and containment	One pump at 4000 GPM and heat exchanger	One pump at 4000 GPM and heat exchanger	RHR Service Water is modeled in detail and so can be directly evaluated in the CRMP tool for the RICT Program
3.7.2 Condition A	One PSW pump inoperable	Two Plant Service Water (PSW) subsystems and Ultimate Heat Sink (UHS)	Yes	Remove heat from equipment	One PSW pump at 2400 GPM and UHS	One PSW pump at 2400 GPM and UHS	One PSW pump at 2400 GPM provides sufficient cooling for one division loads

Table E1-2, Cross-Reference of TSTF-505 and HATCH Unit 1 and Unit 2 Technical Specifications

LCO ACTION TSTF-505/HATCH 1&2 TS	Add RICT?	DISCUSSION
Example 1.3-8 TSTF-505: [New example TS] HATCH 1&2: [New example TS]	N/A	Revised to reflect exception to 30 day RICT limit
Residual Heat Removal Service Water (RHRSW) System TSTF-505: LCO 3.7.1, Required Action A.1 HATCH 1&2: LCO 3.7.1, Required Action A.1	YES	Differs from TSTF-505 since the TSTF did not apply to 30 day Completion Times
Plant Service Water (SW) System and Ultimate Heat Sink (UHS) TSTF-505: LCO 3.7.2, Required Action A.1 HATCH 1&2: LCO 3.7.2, Required Action A.1	YES	Differs from TSTF-505 since the TSTF did not apply to 30 day Completion Times

Table E1-4, Example Risk Informed Completion Times for HATCH Unit 1 and Unit 2 Technical Specifications

LCO ACTION TSTF-505/HATCH 1&2 TS	CONDITION	REQUIRED ACTION	EST RICT[1][2]
Residual Heat Removal Service Water (RHRSW) System TSTF-505: LCO 3.7.1, Required Action A.1 HATCH 1&2: LCO 3.7.1, Required Action A.1	One RHRSW pump inoperable.	A.1 Restore RHRSW pump to OPERABLE status	45d
Plant Service Water (SW) System and Ultimate Heat Sink (UHS) TSTF-505: LCO 3.7.2, Required Action A.1 HATCH 1&2: LCO 3.7.2, Required Action A.1	One PSW pump inoperable.	A.1 Restore PSW pump to OPERABLE status.	45d

Note 1: In accordance with NEI 06-09-A, depending upon the specific inoperable SSC which causes the TS LCO to be not met, the level of risk calculated varies, and a different RICT may be calculated for different inoperable SSCs within the Action.

Note 2: RICTs calculated to be greater than 45 days are capped at 45 days in accordance with the proposed exception to NEI 06-09-A, Revision 0-A.

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ENCLOSURE 5

BASELINE CDF AND LERF

The purpose of this enclosure is to demonstrate that the total Core Damage Frequency (CDF) and total Large Early Release Frequency (LERF) are below the limits established in Regulatory Guide (RG) 1.174 [1], which are 1E-04/year for CDF and 1E-05/year for LERF. These limits allow for the risk metrics of NEI 06-09 [2] to be applied to the Hatch Nuclear Plant (HNP) Risk Informed Completion Time (RICT) Program.

Table E5-1 reflects the Unit 1 and Unit 2 CDF and LERF point estimate values that resulted from a quantification of the One Top Multi-Hazard Model internal events, internal flooding, and fire Probabilistic Risk Assessment (PRA) [3 & 4]. This table also includes an estimate of the seismic contribution to CDF and LERF used in the RICT program. Therefore, the results documented in ML21300A153 [5] of 1.18E-06/yr for seismic CDF and 3.66E-07/yr for seismic LERF ML2230C465 [6] were used. Other external hazards, as discussed in ML21300A153 [5], are below accepted screening criteria, and therefore do not contribute significantly to the totals.

Table E5-1
Total Baseline Average Annual CDF/ LERF

Unit 1		
Source	CDF	LERF
Internal Events	3.63E-06	2.28E-07
Internal Fire	4.87E-05	1.79E-06
Internal Flooding	3.64E-07	3.27E-08
Seismic Penalty[1]	1.18E-06	3.66E-07
Other External Events	Screened Out	
Total Unit 1	5.39E-05	2.42E-06

Unit 2		
Source	CDF	LERF
Internal Events PRA	3.22E-06	2.09E-07
Fire PRA	5.34E-05	1.57E-06
Internal Flooding	2.82E-07	1.79E-08
Seismic Penalty[1]	1.18E-06	3.66E-07
Other External Events	Screened Out	
Total Unit 2	5.81E-05	2.16E-06

Note 1: For seismic a static penalty is applied for Unit 1 & 2 the value of 1.18E-06/yr is used for CDF and a value of 3.66E-07/yr is used for LERF. This value is included in the total for Unit 1 and Unit 2

Table E5-2 reflects the Unit 1 and Unit 2 CDF and LERF mean values [7]. The mean values referred to are the means of the probability distributions that result from the propagation of the uncertainties on the PRA input parameters and model uncertainties explicitly reflected in the PRA models.

Table E5-2
Total Mean Value CDF/ LERF

Unit 1		
Source	CDF	LERF
Internal Events	3.82E-06	2.99E-07
Internal Fire	4.86E-05	1.79E-06
Internal Flooding	3.64E-07	3.27E-08
Seismic Penalty	1.18E-06	3.66E-07
Other External Events	Screened Out	
Total Unit 1	5.40E-05	2.49E-06

Unit 2		
Source	CDF	LERF
Internal Events PRA	3.25E-06	2.13E-07
Fire PRA	5.34E-05	1.57E-06
Internal Flooding	2.77E-07	1.83E-08
Seismic Penalty	1.18E-06	3.66E-07
Other External Events	Screened Out	
Total Unit 2	5.81E-05	2.17E-06

As demonstrated in Table E5-1 and Table E5-2, the total CDF and total LERF for each unit are within the limits set forth in RG 1.174, which permit small changes in risk that may occur during entries into the RICT Program. Therefore, the HNP RICT Program is consistent with NEI 06-09 guidance.

The values shown in Table E5-1 and Table E5-2 are a snapshot in time and are subject to change based on the on-record PRA models that support the RICT Program. The RICT Program will monitor these values to ensure that annual average CDF and LERF are reasonably within RG 1.174 limits of 1E-04 and 1E-05 as a condition of program implementation requirement.

References

[1] U.S. Nuclear Regulatory Commission, Regulatory Guide 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing basis," January 2018 (ADAMS Accession No. ML17317A256).

[2] NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Nuclear Energy Institute, Revision 0-A, October 2012 (ADAMS Accession No. ML122860402).

[3] H-RIE-OTMHM-U01 Version 5. "Plant Hatch Unit 1 One Top Multi Hazard Model OTMHM September 23

[4] H-RIE-OTMHM-U02 Version 5. "Plant Hatch Unit 1 One Top Multi Hazard Model OTMHM September 23

[5] ML21300A153, Hatch RICT LAR, October 26, 2021.

[6] ML2230C465, Hatch RICT RAI Responses, August 18, 2022.

[7] RBA-23-007-H, Hatch LAR Enclosure 5 Mean Values, Version 1.

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ENCLOSURE 12

RISK MANAGEMENT ACTION EXAMPLES

Table of Contents

1 Introduction

This enclosure describes the process for identification and implementation of Risk Management Actions (RMAs) applicable during extended Completion Times (CTs) and provides examples of RMAs. RMAs will be governed by plant procedures for planning and scheduling maintenance activities. The procedures will provide guidance for the determination and implementation of RMAs when entering the Risk-Informed Completion Time (RICT) Program consistent with the guidance provided in NEI 06-09-A, Revision 0-A [1].

2 Responsibilities

For planned entries into the RICT Program, Work Management is responsible for developing the RMAs with assistance from Operations and Risk Informed Engineering (RIE). Operations is responsible for approval and implementation of RMAs. For emergent entry into extended CTs, Operations is also responsible for developing the RMAs.

3 Procedural Guidance

For planned maintenance activities, implementation of RMAs will be required if it is anticipated that the Risk Management Action Time (RMAT) will be exceeded. For emergent activities, RMAs must be implemented if the RMAT is reached. Also, if an emergent event occurs requiring recalculation of a RMAT already in place, the procedure will require a re-evaluation of the existing RMAs for the new plant configuration to determine if new RMAs are appropriate. These requirements of the RICT Program are consistent with the guidance of NEI 06-09 [1].

For emergent entry into a RICT, if the extent of condition is not known, RMAs related to the success of redundant and diverse SSCs and reducing the likelihood of initiating events relying on the affected function will be developed to address the increased likelihood of a common cause event.

RMAs will be implemented in accordance with current procedures [2] [3] [4] no later than the time at which an Incremental Core Damage Probability (ICDP) of 1E-6 is reached, or no later than the time when an Incremental Large Early Release Probability (ILERP) of 1E-7 is reached. If, as the result of an emergent condition, the Instantaneous Core Damage Frequency (ICDF) or the Instantaneous Large Early Release Frequency (ILERF) exceeds 1E-3 per year or 1E-4 per year, respectively, RMAs are also required to be implemented. These requirements are consistent with the guidelines of NEI 06-09 [1].

By determining which Structures, Systems, or Components (SSCs) are most important from a CDF or LERF perspective for a specific plant configuration, RMAs may be created to protect these SSCs. Similarly, knowledge of the initiating event or sequence contribution to the configuration-specific CDF or LERF allows development of RMAs that enhance the capability to mitigate such events. The RMA process also makes use of existing qualitative programs such as the Protected Train/Equipment [7] and Switchyard Work controls [8]. If the planned activity or emergent condition includes an SSC that is identified to impact Fire PRA, as identified in the current Configuration Risk Management Program (CRMP), Fire PRA specific RMAs associated with that SSC will be implemented per the current plant procedure. RMAs are developed based on the Protected Train/Equipment program [7] and on the CRMP tool to identify configuration-specific RMA candidates to manage the risk associated with internal events, internal flooding, and fire events.

It is possible to credit RMAs in RICT calculations, to the extent the associated plant equipment and operator actions are modeled in the PRA; however, such quantification of RMAs is neither required nor expected by NEI 06-09 [1]. Nonetheless, if RMAs will be credited to determine RICTs, the process used will be consistent with the guidance in NEI 06-09-A [1].

Site procedures classify RMAs into the three categories described below, in accordance with NEI 06-09-A:

Tier 1 Actions to increase risk awareness and control.

- Brief operating shifts and increase operator awareness of configuration specific risks.
- Conduct pre-job briefing of maintenance personnel, emphasizing risk aspects of planned maintenance activities.
- Increase control of activities that could result in an initiating event (e.g. loss of offsite power).
- Protect redundant components identified by the protected train/component process.
- Protect functional components that are most important for mitigating risk significant events in the CRM.
- Require a knowledgeable observer or subject matter expert to be present for the maintenance activity, or for applicable portions of the activity.

Tier 2 Actions to reduce the duration of maintenance activities.

- Pre stage parts and materials.
- Conduct training on mockups to familiarize maintenance personnel with the activity.
- Perform maintenance around the clock.
- Establish contingency plans to restore to functional status those out of service components that are most important to accident mitigation.
- Defer activities that could result in an initiating event (e.g. loss of offsite power).
- Protect a greater number of the functional components that are most important for mitigating non-fire and fire events.
- Establish alternate success paths for performance of the safety function of the out-of-service equipment. Equipment used to establish these alternate success paths need not necessarily be within the overall scope of the maintenance rule (can use portable equipment).
- Evaluate and implement alternate plant alignments that minimize risk. For example, minimize the number of components running on the protected train safety bus during a diesel generator extended AOT, such that load shed of the protected safety bus loads is more likely to succeed.
- Walkdowns of key safety systems by on-shift SROs and management personnel before and during the work activity.
- Increasing surveillance frequencies of key safety functions by testing alternate equipment prior to the planned work or frequent inspections of standby equipment during work.
- Establish other compensatory measures such as temporary power or pumps.
- Reschedule risk significant work.
- Reduce the duration of risk significant work.

Tier 3 - Actions to minimize the magnitude of the risk increase.

- Suspend or minimize activities on redundant systems
- Suspend or minimize activities on other systems that adversely affect the CDF or LERF

- Suspend or minimize activities on systems that may cause a trip or transient to minimize the likelihood of an initiating event that the out-of-service component is meant to mitigate
- Use temporary equipment to provide backup power, ventilation, etc.
- Reschedule other risk-significant activities
- Take immediate action to restore to functional status those out of service components that are most important to accident mitigation.
- If unable to transition below RED in a reasonable amount of time, not to exceed 3 days from the time a RED condition was entered, consider an orderly transition to Mode 3.
- Contact RIE staff for additional guidance on potential means of lowering risk below RED.
- Implement actions that generate increased fire risk awareness, control, and coordination.
- Confirm the availability of alternate success paths for safe shutdown if required. (Farley/Hatch only)
- Protect functional components that are most important for mitigating fire events.
- For high risk fire zones, verify and maintain functionality of the following:
    - Detection
    - Suppression
    - Barriers
    - Fire Pumps
- For any selected fire zones with degraded or unavailable fire protection equipment, the following actions may be taken:
    - Place restrictions on work activities (including “hot work”) that could cause fires.
    - Place restrictions on storage and movement of transient combustibles.
    - Perform walkdowns to verify orderly storage of transient combustibles.
    - Implement fire watches.
    - Install temporary fire barriers such as fire wraps, blankets, or other approved barriers to protect cables or other SSCs from being damaged.
    - Pre-stage firefighting personnel and/or equipment to reduce fire severity and propagation.
    - Perform thermography to identify electrical hot spots.
    - Defer circuit breaker operations for 480V and higher voltage breakers.

Determination of RMAs involves the use of both qualitative and quantitative considerations for the specific plant configuration and the practical means available to manage risk. The scope and number of RMAs developed and implemented are reached in a graded manner. Procedural guidance for development of RMAs in support of the RICT program builds off the RMAs developed for other processes, such as the RMAs developed under the 10 CFR 50.65(a)(4) program and the protected equipment program. Additionally, Common Cause RMAs are developed to address the potential impact of common cause failures.

For emergent conditions where the extent of condition is not performed prior to entering into the Risk Management Action Times or the extent of condition cannot rule out the potential for common cause failure, common cause RMAs are expected to be implemented to mitigate common cause failure potential and impact. Common cause RMAs are developed to ensure availability of redundant SSCs, to ensure availability of diverse or alternate systems, to reduce the likelihood of initiating events that require operation of the out-of-service components, and to prepare plant personnel to respond to additional failures. Common cause RMAs are developed by considering the impact of loss of function for the affected SSCs.

Common Cause RMAs lower configuration risk by focusing on

- Availability of SSCs providing redundancy to the failed SSC,

- Availability of diverse SSCs (e.g. HPCI vs. RCIC) providing redundancy for functions performed by the failed SSC,
- Reducing the likelihood of events that can impact the availability of diverse or redundant SSCs,
- Reducing the likelihood of events for which event mitigation may require operation of diverse or redundant SSCs,
- Readiness of operators to respond to initiating events assuming SSCs susceptible to failure by common cause will fail, and
- Readiness of maintenance to respond to additional failures of diverse and redundant SSCs.

Common Cause RMAs include the following actions:

- Defer maintenance and testing activities that could generate an initiating event for which event mitigation may require operation of SSCs susceptible to failure by common cause.
- Establish a compensatory action, shift brief, or standing order that focuses on actions operators will take in response to an initiating event and failure of SSCs susceptible to failure by common cause.
- For the SSCs that provide redundancy to the failed SSC,
    - Reduce the likelihood of unavailability, including for support systems and power supplies.
    - Perform non-intrusive inspections.
    - Defer maintenance and testing activities that could impact availability of the SSC.
- For diverse SSCs (e.g. normal charging pump) that provide redundancy for functions performed by the failed SSC,
    - Reduce the likelihood of unavailability, including for support systems and power supplies.
    - Perform non-intrusive inspections.
    - Defer maintenance and testing activities that could impact availability of the SSC.
- For applicable standby SSCs, perform an operability/functionality run.
- Establish an alternate functional capability (e.g. installation of portable equipment).
- Generate and implement a contingency plan to
    - Enable prompt installation of an alternate functional capability (e.g. shiftly review of procedures on use of portable equipment), or
    - Enable prompt restoration of functionality of a failed SSC (e.g. maintenance crash cart)
- For applicable running components, monitor parameters more frequently and/or expand the scope of parameter monitoring.
- For applicable SSCs, perform monitoring and inspection activities based on review of information/data from previous testing, maintenance, and/or operating experience.
- General guidance for RMAs that maintain functionality of important equipment:
- Protect other systems that perform the same function.
- Place standby equipment in service.
- If available, stage temporary equipment such as FLEX equipment and perform a shift brief on its use.

4 Examples

Representative examples of RMAs that may be considered during a RICT Program entry, to reduce the risk impact and ensure adequate defense-in-depth, for TS 3.7 Plant Systems are provided below.

4.1 TS 3.7.1 Residual Heat Removal Service Water (RHRSW) System Action Statements

To adequately demonstrate a reasonable balance of defense-in-depth is maintained, the following sample RMAs are provided for TS 3.7 Action Statements, which pertain to the safety-related plant system (RHRSW).

For TS 3.7.1 Condition A.1, one RHRSW pump is inoperable, the sample calculated RICT provided in Enclosure 1 is on the order of 45 days. The front stop completion time is 30 days. Example RMAs to ensure a reasonable balance of defense-in-depth is maintained during the example yellow conditions, Tier 1 actions scenario for TS 3.7.1 Condition A are as follows.

1. Actions to increase risk awareness and control.
    a. Briefing of the on-shift operations crew concerning the unit activities, including any compensatory measures established, and review of the appropriate emergency operating procedures for a Loss of RHR Service Water.
    b. Periodic walkdowns by on-shift SROs and/or management personnel to verify implementation of established risk management actions.

2. Actions to reduce the duration of maintenance activities.
    a. For preplanned RICT entry, creation of a sub schedule related to the specific evolution which is reviewed for personnel resource availability.
    b. For preplanned RICT entry, confirmation of work package preparation and parts availability prior to entry.
    c. Work the activity around the clock if the projected A(4) risk will increase to Orange.
    d. Engage specialty contractors or subject matter experts.

3. Actions to minimize the magnitude of the risk increase.
    a. Protect redundant components and the opposite division in accordance with site procedure.
    b. Identify and walkdown high risk fire zones for transient combustibles and issues with fire detection, suppression, or barriers.

4.2 TS 3.7.2 Plant Service Water (PSW) System Action Statements

To adequately demonstrate a reasonable balance of defense-in-depth is maintained, the following sample RMAs are provided for TS 3.7 Action Statements, which pertain to the safety-related plant system (PSW).

For TS 3.7.2 Condition A.1, one PSW pump is inoperable, the sample calculated RICT provided in Enclosure 1 is on the order of 45 days. The front stop completion time is 30 days. Example RMAs to ensure a reasonable balance of defense-in-depth is maintained during the example yellow conditions, Tier 1 actions scenario for TS 3.7.2 Condition A are as follows:

1. Actions to increase risk awareness and control.
    a. Briefing of the on-shift operations crew concerning the unit activities, including any compensatory measures established, and review of the appropriate emergency operating procedures for a Loss of Plant Service Water. Remind the crew that PSW may be conditionally critical for continued full power operation with less than 4 pumps available. Notification of the Transmission Control Center

(TCC) of the configuration so that any planned activities with the potential to cause a grid disturbance are deferred.
b. Periodic walkdowns by on-shift SROs and/or management personnel to verify implementation of established risk management actions.

2. Actions to reduce the duration of maintenance activities.
   a. For preplanned RICT entry, creation of a sub schedule related to the specific evolution which is reviewed for personnel resource availability.
   b. For preplanned RICT entry, confirmation of work package preparation and parts availability prior to entry.
   c. Work the activity around the clock if the projected A(4) risk will increase to Orange.
   d. Engage specialty contractors or subject matter experts.

3. Actions to minimize the magnitude of the risk increase.
   a. Protect redundant components and the opposite division in accordance with site procedure.
   b. Identify and walkdown high risk fire zones for transient combustibles and issues with fire detection, suppression, or barriers.

5 References

[1] Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0-A, October 12, 2012 (ADAMS Accession No. ML 12286A322).

[2] Southern Nuclear Company NMP-GM-031, *"On-Line Configuration Risk Management Program," Version 9.4,* May 2023.

[3] Southern Nuclear Company NMP-GM-031-002, *"Calculation of RMAT and RICT for the RICT Program," Version 6.2,* January 2023.

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