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NL-21-0784

Docket Nos. 50-321
50-366

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

Edwin I. Hatch Nuclear Plant – Units 1 and 2
License Amendment Request: Revise Technical Specifications to Adopt TSTF-227, “Revision to EOC-RPT Pump Actions” and TSTF-297, “Enhancements to Required Actions for Feedwater and Main Turbine High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT Instrumentation”

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests a license amendment to Edwin I. Hatch Nuclear Plant (HNP) Unit 1 Renewed Facility Operating License DPR-57 and Unit 2 Renewed Facility Operating License NPF-5. The proposed amendment requests adoption of TSTF-227, Revision 0, involving clarification to the End of Cycle Reactor Pump Trip (EOC-RPT) Instrumentation Technical Specifications (TS), and TSTF-297, Revision 1, involving enhancements to Feedwater and Main Turbine High Water Level Trip, EOC-RPT, and Anticipated Transient Without Scram (ATWS)-RPT TS. Specifically, the amendment proposes to add clarity and add Notes and a new Required Action to allow affected feedwater pump(s) and main turbine valve(s) to be removed from service.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked to show the proposed change. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides the existing TS Bases pages marked to show revised text associated with the proposed TS changes and is provided for information only.

SNC requests approval of the proposed amendment by December 31, 2022. The proposed changes would be implemented within 60 days after issuance of the amendment.

There are no regulatory commitments made in this submittal.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Georgia Official.

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If you should have any questions regarding this submittal, please contact Ryan Joyce at 205-992-6468.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 13th day of December 2021.

Respectfully submitted,



Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Company

CAG/tle

Enclosure: Description and Assessment

Attachments: 1. Proposed Technical Specifications Changes (Mark-Up)
2. Revised Technical Specification Pages
3. Proposed Technical Specifications Bases Changes (Mark-Up) – For Information Only

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

ENCLOSURE

**Southern Nuclear Operating Company
Hatch Nuclear Plant - Units 1 and 2
Revise Technical Specifications to Adopt
TSTF 227, "Revision to EOC-RPT Pump Actions"
and**

**TSTF-297, "Enhancements to Required Actions for Feedwater and Main Turbine
High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT
Instrumentation"**

Description and Assessment

1.0 SUMMARY DESCRIPTION

Southern Nuclear Operating Company (SNC) requests amendment to the Edwin I. Hatch Technical Specifications (TS) for the Hatch Nuclear Plant (HNP), Unit Nos. 1 and 2. The proposed change incorporates two Technical Specification Task Force Travelers (TSTFs), described below.

TSTF-227, Rev. 0: This TSTF modifies Improved Technical Specifications (NUREG-1433) to eliminate ambiguity in the End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation TS, Condition A. Since the LCO allows for having EOC-RPT instrumentation OPERABLE or meeting certain fuel thermal limits, Condition A is inappropriately worded. TSTF-227 proposes a change to Condition A to add clarity. (Reference 1)

TSTF-297, Rev. 1: This TSTF modifies Improved Technical Specifications (NUREG-1433) to add a new Required Action and corresponding note to several TS sections, to allow affected feedwater pump(s) and main turbine valve(s) to be removed from service. This change is necessary to allow components to be removed from service to fulfill the safety function without requiring a reduction in rated thermal power. (Reference 2)

These two TSTFs affect the following HNP TS Sections:

- 3.3.2.2 - Feedwater and Main Turbine High Water Level Trip Instrumentation
- 3.3.4.1 - End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation
- 3.3.4.2 - Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

Associated TS Bases are revised to reflect these TS changes.

2.0 DETAILED DESCRIPTION

2.1 Existing Technical Specifications

TS 3.3.2.2, Required Action C.1, requires reactor thermal power be reduced to less than 24% if the following Required Actions and associated Completion Times are not met.

- For one feedwater and main turbine high water level trip channel inoperable, place channel in trip within 7 days, or
- For two or more feedwater and main turbine high water level trip channels inoperable, restore feedwater and main turbine high water level trip capability within 2 hours.

TS 3.3.4.1, Condition A must be entered if one or more channels are inoperable. There are two channels per trip system for each EOC-RPT instrumentation Function, i.e., Turbine Stop Valve Closure, and Turbine Control Valve Fast Closure or Trip Oil Low Pressure.

TS 3.3.4.1 Required Action C.1 allows removal of a recirculation pump from service if the trip function is lost. This Required Action should only apply if loss of channel operability is the result of an inoperable RPT breaker. A separate Required Action (A.2) exists to direct placing the inoperable channel in trip if required.

Similarly, TS 3.3.4.2 Required Action D.1 allows removal of a recirculation pump from service if the trip function is lost. This Required Action should only apply if loss of channel operability is the result of an inoperable RPT breaker. A separate Required Action (A.2) exists to direct placing the inoperable channel in trip if required.

2.2 Reason for Proposed Change

TSTF-227

TSTF 227 is intended to eliminate ambiguity in TS 3.3.4.1, EOC-RPT Instrumentation. The proposed change revises Condition A to be applicable whenever one or more **required** channels of EOC-RPT pump trip instrumentation is not OPERABLE. Without the word 'required', one could interpret Condition A as needing entry even if the fuel thermal limits were being applied instead of applying the operability requirements to the EOC-RPT instrumentation. This change clarifies that the EOC-RPT instrumentation would not be required, and Condition A would not need to be entered, if the Minimum Critical Power Ratio limits are made applicable, as allowed by the LCO. This change is considered an administrative clarification only.

TSTF-297

TSTF-297 allows for operational flexibility that could prevent an unnecessary plant power reduction. The current wording of TS 3.3.2.2 requires a power reduction below 24% even though the safety function could be implemented by removing the inoperable equipment from service. This proposed change would allow for the removal of the inoperable equipment from service, thereby ensuring its function is performed, while not requiring the plant to experience an unnecessary transient.

Technical Specifications 3.3.4.1 and 3.3.4.2 already have provisions to remove the associated recirculation pump from service if the trip function is lost. However, modified wording and a note are added to the Technical Specifications to ensure clarity exists. The changes provide clarity that the Required Action to remove the affected recirculation pump from service is only applicable if the inoperable channel is the result of an inoperable RPT breaker.

2.3 Description of Proposed Change

The proposed change incorporates TSTF-227 and TSTF-297 as follows.

Current TS 3.3.2.2 REQUIRED ACTION	Proposed TS 3.3.2.2 REQUIRED ACTION
C.1 Reduce THERMAL POWER to < 24% RPT	C.1 ----- NOTE ----- Only applicable if inoperable channel is the result of an inoperable feedwater pump valve or main turbine stop valve. ----- Remove affected feedwater pump(s) and main turbine valve(s) from service. <u>OR</u> C.2 Reduce THERMAL POWER to < 24% RPT.

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The new Required Action C.1 has a Completion Time of 4 hours, which is consistent with the C.2 (former C.1) Completion Time. The associated TS 3.3.2.2 Bases will also be revised to reflect this additional Required Action.

Current TS 3.3.4.1 CONDITION	Proposed TS 3.3.4.1 CONDITION
A. One or more channels inoperable	A. One or more required channels inoperable.
Current TS 3.3.4.1 REQUIRED ACTION	Proposed TS 3.3.4.1 REQUIRED ACTION
C.1 Remove the associated recirculation pump from service.	C.1 ----- NOTE ----- Only applicable if inoperable channel is the result of an inoperable RPT breaker. ----- Remove the affected recirculation pump from service.

The associated Technical Specification 3.3.4.1 Bases will also be revised to add references to actions to be taken for **required** instrumentation with regards to entry into Condition A and to reflect the addition of the note to Required Action C.1.

Current TS 3.3.4.2 REQUIRED ACTION	Proposed TS 3.3.4.2 REQUIRED ACTION
D.1 Remove the associated recirculation pump from service.	D.1 ----- NOTE ----- Only applicable if inoperable channel is the result of an inoperable RPT breaker. ----- Remove the affected recirculation pump from service.

The associated Technical Specification 3.3.4.2 Bases will also be revised to reflect the addition of the note to Required Action D.1.

See the attached marked up pages for HNP Units 1 and 2, included in Attachment 1, for the details concerning the specific changes. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides the existing TS Bases pages marked to show revised text associated with the proposed TS changes and is provided for information only.

There are no deviations from the preapproved TSTF-227 and TSTF-297 in the proposed HNP Technical Specifications changes.

3.0 TECHNICAL EVALUATION

TSTF-227

This TSTF only affects TS 3.3.4.1, EOC-RPT and is intended to eliminate ambiguity. The LCO currently allows for the option of having the EOC-RPT pump trip instrumentation OPERABLE or applying appropriate thermal limits. The proposed change revises Condition A to be applicable whenever one or more **required** channels of EOC-RPT pump trip instrumentation is not OPERABLE. This change clarifies that the EOC-RPT instrumentation would not be required, and Condition A would not need to be entered, if the Minimum Critical Power Ratio limits are made applicable as allowed by the LCO. This change is considered an administrative clarification only.

TSTF-297

This change allows for operational flexibility that could prevent an unnecessary plant power reduction. For example, if an individual reactor feedwater pump lost its trip capability, plant power may be required to be reduced to below 24% rated thermal power if repairs could not be promptly made. This could be an unnecessary plant power reduction if the affected reactor feedwater pump can be removed from service, thereby fulfilling the intended function. The current wording of the Technical Specification 3.3.2.2 Required Actions does not allow for this option. Currently, the Technical Specifications would require a power reduction below 24% even if the reactor feedwater pump could be removed from service. This proposed change would allow for the removal of the inoperable equipment from service, thereby ensuring its function is performed, while not requiring the plant to experience an unnecessary transient. In this Condition, the safety function has been implemented and therefore, no additional compensatory measures are required.

Technical Specifications 3.3.4.1 and 3.3.4.2 already have provisions to remove the associated recirculation pump from service if the trip function is lost. However, modified wording and a note are added to the Technical Specifications to ensure clarity exists. The changing of the word 'associated' to 'affected' is considered administrative and provides better clarity. The addition of the note does not actually change the Technical Specification requirements, it simply provides clarity that the Required Action to remove the affected recirculation pump from service is only applicable if the inoperable channel is the result of an inoperable RPT breaker. The associated Required Action to which the note is being added should only apply if there is a loss of the ability for the RPT breaker to trip. A separate Required Action (A.2) exists to direct placing the inoperable channel in trip if required. Therefore, the addition of the note provides greater clarity that Required Action C.1 for Technical Specification 3.3.4.1 and Required Action D.1 for Technical Specification 3.3.4.2 only applies for an inoperable RPT breaker.

4.0 REGULATORY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.36, Technical specifications

10 CFR 50.36(c)(2)(ii) states: *A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:...*

(C) Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

TS 3.3.2.2, Feedwater and Main Turbine Trip High Water Level Instrumentation, and 3.3.4.1, End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation, satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

(D) Criterion 4. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that wither assumes the failure of or presents a challenge to the integrity of a fission product barrier.

TS 3.3.4.2, Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation, satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

10 CFR 50.62, Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants

10 CFR 50.36(c)(5) states: *Each boiling water reactor must have equipment to trip the reactor coolant recirculating pumps automatically under conditions indicative of an ATWS. This equipment must be designed to perform its function in a reliable manner.*

TS 3.3.4.2, Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation, satisfies 10 CFR 50.36(c)(5) by initiating an RPT to aid in preserving the integrity of the fuel cladding following events in which a scram does not, but should, occur.

10 CFR 50, Appendix A General Design Criterion 20, Protection system functions

The protection system shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

The TS 3.3.2.2, Feedwater and Main Turbine Trip High Water Level Instrumentation fulfills the requirements of Criterion 20 by mitigating a feedwater controller failure resulting in a maximum demand event as described in UFSAR Section 15.2.7.1.

The TS 3.3.4.1, End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation and TS 3.3.4.2, Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT)

Instrumentation fulfill the requirements of Criterion 20 by monitoring the appropriate plant variables and automatically initiating an RPT when the variables exceed setpoints.

10 CFR 50 Appendix A General Design Criterion 21, Protection system reliability and testability

The protection system shall be designed for high functional reliability and inservice testability commensurate with the safety functions to be performed. Redundancy and independence designed into the protection system shall be sufficient to assure that (1) no single failure results in loss of the protection function and (2) removal from service of any component or channel does not result in loss of the required minimum redundancy unless the acceptable reliability of operation of the protection system can be otherwise demonstrated. The protection system shall be designed to permit periodic testing of its functioning when the reactor is in operation, including a capability to test channels independently to determine failures and losses of redundancy that may have occurred.

The TS 3.3.4.1, End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation and TS 3.3.4.2, Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation is designed such that no single failure or operator action can prevent an RPT and the instrumentation and logic can be tested during plant operation to ensure availability. Therefore, this RPT instrumentation fulfills the requirements of Criterion 21.

It is noted HNP Unit 2 was licensed to the 10 CFR 50, Appendix A, GDC. However, HNP Unit 1 was not licensed to the 10 CFR 50, Appendix A, GDC. HNP Unit 1 was licensed to the applicable Atomic Energy Commission (AEC) preliminary general design criteria identified in Federal Register 32 FR 10213, published July 11, 1967 (ADAMS Accession No. ML043310029). The applicable AEC proposed criteria were compared to the 10 CFR 50, Appendix A, GDC, as documented in the Hatch Updated Final Safety Analysis Report (UFSAR), Appendix F, "Conformance to the Atomic Energy Commission (AEC) Criteria." Following implementation of the proposed change, HNP Unit 1 will remain in compliance with applicable AEC design criteria as described in the HNP Unit 1 UFSAR. Therefore, this difference does not alter the conclusion that the proposed changes are applicable to HNP Unit 1.

4.2 Precedent

On May 10, 2006, the NRC issued a license amendment to Exelon Nuclear for Peach Bottom Units 2 and 3 (Reference 3). The Peach Bottom Amendment incorporated numerous TSTFs, including TSTF-227 and TSTF-297. This license amendment request is consistent with the NRC approved implementation of TSTF-227 and TSTF-297 issued to Exelon Nuclear for Peach Bottom Units 2 and 3.

4.3 No Significant Hazards Consideration Analysis

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

SNC requests an amendment to the Technical Specifications (TS) for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2 to adopt Technical Specification Task Force (TSTF)-227, Revision 0, Revision to EOC-RPT [end-of-cycle recirculation pump trip] Pump Actions," and TSTF-297, Revision 1, "Enhancements to Required Actions for Feedwater and Main Turbine High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT [anticipated transient without scram recirculation pump trip] Instrumentation."

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Description and Assessment

TSTF-227 is intended to eliminate ambiguity in the TS 3.3.4.1, End of Cycle Reactor Pump Trip (EOC-RPT) Instrumentation. The proposed change revises Condition A to be applicable whenever one or more required channels of EOC-RPT pump trip instrumentation is not OPERABLE.

TSTF-297 adds a new Required Action to TS 3.3.2.2, Feedwater and Main Turbine High Water Level Trip Instrumentation, and Notes to TS sections 3.3.2.2, 3.3.4.1, and 3.3.4.2, Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation to allow components to be removed from service to fulfill the associated safety function.

As required by 10 CFR 50.91(a), the SNC analysis of the issue of the no significant hazards consideration is presented below:

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

Response: No

There are no changes to the plant configuration assumed for any accident. The removal from service of equipment that results in its safety function being met cannot adversely affect the consequences of accidents previously evaluated. Other changes are administrative clarifications that have no effect on accidents.

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

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

Response: No

No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the proposed changes. All systems, structures, and components previously required for the mitigation of a transient remain capable of fulfilling their intended design functions. The proposed changes have no adverse effects on any safety-related system or component and do not challenge the performance or integrity of any safety related system.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from those that have been previously evaluated.

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

Response: No

The actions involved with this activity ensure that safety functions are met. There are no changes in the overall requirements of having trip instrumentation available for event mitigation. There are no effects on the plant safety analyses.

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.

4.4 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.

5.0 ENVIRONMENTAL EVALUATION

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. 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.

6.0 REFERENCES

1. Technical Specification Task Force (TSTF)-227, Revision 0, "Revision to EOC-RPT Pump Actions," dated February 19, 1998 (ML040570183)
2. Technical Specification Task Force (TSTF)-297, Revision 1, "Enhancements to Required Actions for Feedwater and Main Turbine High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT Instrumentation," dated November 18, 1999
3. Letter from NRC to Exelon Generating Company, LLC, dated May 10, 2006, "Peach Bottom Atomic Power Station, Units 2 and 3 – Issuance of Amendments Re: Incorporation of Previously NRC-Approved Generic Technical Specification Changes." (ML061070292)

**Edwin I. Hatch Nuclear Plant - Units 1 and 2
Revise Technical Specifications to Adopt
TSTF 227, “Revision to EOC-RPT Pump Actions”
and**

**TSTF-297, “Enhancements to Required Actions for Feedwater and Main Turbine
High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT
Instrumentation”**

Attachment 1

Proposed Technical Specification Changes (Mark-Up)

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine Trip High Water Level Instrumentation

LCO 3.3.2.2 Three channels of feedwater and main turbine trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER \geq 24% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	<p>C.1</p> <p style="text-align: center;">-----NOTE----- <u>Only applicable if inoperable channel is the result of inoperable feedwater pump valve or main turbine stop valve.</u> -----</p> <p><u>Remove affected feedwater pump(s) and main turbine valve(s) from service.</u></p> <p><u>OR</u></p> <p>C.2 Reduce THERMAL POWER to < 24% RTP.</p>	<p style="text-align: right;"><u>4 hours</u></p> <p style="text-align: right;">4 hours</p>

3.3 INSTRUMENTATION

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

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

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

OR

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

APPLICABILITY: THERMAL POWER \geq 27.6% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with EOC-RPT trip capability not maintained. <u>AND</u> MCPR limit for inoperable EOC-RPT not made applicable.	B.1 Restore EOC-RPT trip capability. <u>OR</u>	2 hours
	B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 <u>-----NOTE-----</u> <u>Only applicable if inoperable channel is the result of an inoperable RPT breaker.</u> Remove the associated- <u>affected</u> recirculation pump from service.	4 hours
	<u>OR</u> C.2 Reduce THERMAL POWER to < 27.6% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

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

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 -----NOTE----- <u>Only applicable if inoperable channel is the result of an RPT breaker.</u> ----- Remove the associated-affected recirculation pump from service.	6 hours
	<u>OR</u> D.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine Trip High Water Level Instrumentation

LCO 3.3.2.2 Three channels of feedwater and main turbine trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER \geq 24% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	<p>C.1</p> <p style="text-align: center;">-----NOTE----- <u>Only applicable if inoperable channel is the result of inoperable feedwater pump valve or main turbine stop valve.</u> -----</p> <p><u>Remove affected feedwater pump(s) and main turbine valve(s) from service.</u></p> <p style="text-align: center;"><u>OR</u></p> <p><u>C.2</u> Reduce THERMAL POWER to < 24% RTP.</p>	<p style="text-align: right;"><u>4 hours</u></p> <p style="text-align: right;">4 hours</p>

3.3 INSTRUMENTATION

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

- LCO 3.3.4.1
- a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:
 - 1. Turbine Stop Valve (TSV) - Closure; and
 - 2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.
- OR
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.

APPLICABILITY: THERMAL POWER ≥ 27.6% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with EOC-RPT trip capability not maintained. <u>AND</u> MCPR limit for inoperable EOC-RPT not made applicable.	B.1 Restore EOC-RPT trip capability. <u>OR</u>	2 hours
	B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 <u>-----NOTE-----</u> <u>Only applicable if inoperable channel is the result of an inoperable RPT breaker.</u> ----- Remove the associated- <u>affected</u> recirculation pump from service.	4 hours
	<u>OR</u> C.2 Reduce THERMAL POWER to < 27.6% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

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

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 <u>-----NOTE-----</u> <u>Only applicable if inoperable channel is the result of an inoperable RPT breaker.</u> Remove the associated-affected recirculation pump from service.	6 hours
	<u>OR</u> D.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

**Edwin I. Hatch Nuclear Plant - Units 1 and 2
Revise Technical Specifications to Adopt
TSTF 227, "Revision to EOC-RPT Pump Actions"
and**

**TSTF-297, "Enhancements to Required Actions for Feedwater and Main Turbine
High Water Level Trip Instrumentation, EOC-RPT Instrumentation, and ATWS-RPT
Instrumentation"**

Attachment 2

Revised Technical Specification Pages

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine Trip High Water Level Instrumentation

LCO 3.3.2.2 Three channels of feedwater and main turbine trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER \geq 24% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	C.1 -----NOTE----- Only applicable if inoperable channel is the result of inoperable feedwater pump valve or main turbine stop valve. ----- Remove affected feedwater pump(s) and main turbine valve(s) from service.	4 hours
	C.2 <u>OR</u> Reduce THERMAL POWER to < 24% RTP.	4 hours

3.3 INSTRUMENTATION

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

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

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

OR

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

APPLICABILITY: THERMAL POWER \geq 27.6% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with EOC-RPT trip capability not maintained. <u>AND</u> MCPR limit for inoperable EOC-RPT not made applicable.	B.1 Restore EOC-RPT trip capability.	2 hours
	<u>OR</u> B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 -----NOTE----- Only applicable if inoperable channel is the result of an inoperable RPT breaker. ----- Remove the affected recirculation pump from service.	4 hours
	<u>OR</u> C.2 Reduce THERMAL POWER to < 27.6% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

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

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.2	Verify TSV - Closure and TCV Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is $\geq 27.6\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: TSV - Closure: $\leq 10\%$ closed; and TCV Fast Closure, Trip Oil Pressure - Low: ≥ 600 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.5	-----NOTE----- Breaker interruption time may be assumed from the most recent performance of SR 3.3.4.1.6. ----- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.6	Determine RPT breaker interruption time.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 -----NOTE----- Only applicable if inoperable channel is the result of an RPT breaker. ----- Remove the affected recirculation pump from service.	6 hours
	<u>OR</u> D.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: <ul style="list-style-type: none"> a. Reactor Vessel Water Level - ATWS-RPT Level: ≥ -73 inches; and b. Reactor Steam Dome Pressure - High: ≤ 1175 psig. 	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine Trip High Water Level Instrumentation

LCO 3.3.2.2 Three channels of feedwater and main turbine trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER \geq 24% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	<p>C.1 -----NOTE----- Only applicable if inoperable channel is the result of inoperable feedwater pump valve or main turbine stop valve. -----</p> <p>Remove affected feedwater pump(s) and main turbine valve(s) from service.</p> <p style="text-align: center;"><u>OR</u></p> <p>C.2 Reduce THERMAL POWER to < 24% RTP.</p>	<p>4 hours</p> <p>4 hours</p>

3.3 INSTRUMENTATION

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

- LCO 3.3.4.1
- a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:
 - 1. Turbine Stop Valve (TSV) - Closure; and
 - 2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.
- OR
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.

APPLICABILITY: THERMAL POWER ≥ 27.6% RTP.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each channel.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with EOC-RPT trip capability not maintained. <u>AND</u> MCPR limit for inoperable EOC-RPT not made applicable.	B.1 Restore EOC-RPT trip capability.	2 hours
	<u>OR</u> B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 -----NOTE----- Only applicable if inoperable channel is the result of an inoperable RPT breaker. ----- Remove the affected recirculation pump from service.	4 hours
	<u>OR</u> C.2 Reduce THERMAL POWER to < 27.6% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

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

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.2	Verify TSV - Closure and TCV Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is $\geq 27.6\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: TSV - Closure: $\leq 10\%$ closed; and TCV Fast Closure, Trip Oil Pressure - Low: ≥ 600 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.5	-----NOTE----- Breaker interruption time may be assumed from the most recent performance of SR 3.3.4.1.6. ----- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.6	Determine RPT breaker interruption time.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 -----NOTE----- Only applicable if inoperable channel is the result of an inoperable RPT breaker. ----- Remove the affected recirculation pump from service.	6 hours
	<u>OR</u> D.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE	FREQUENCY
SR 3.3.4.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: <ul style="list-style-type: none"> a. Reactor Vessel Water Level - ATWS-RPT Level: \geq -73 inches; and b. Reactor Steam Dome Pressure - High: \leq 1175 psig. 	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program

**Edwin I. Hatch Nuclear Plant - Unit 1
Revise Technical Specifications to Adopt
TSTF 227, “Revision to EOC-RPT Pump Actions”
and
TSTF-297, “Enhancements to Feedwater/Main Turbine High Water Level Trip,
EOC-RPT, and ATWS-RPT Specifications”**

Attachment 3

**Proposed Technical Specification Bases Changes
(Mark-Up)**

BASES

ACTIONS

B.1 (continued)

not maintained). Therefore, continued operation is only permitted for a 2 hour period, during which feedwater and main turbine high water level trip capability must be restored. The trip capability is considered maintained when sufficient channels are OPERABLE or in trip such that the feedwater and main turbine high water level trip logic will generate a trip signal on a valid signal. This requires two channels to each be OPERABLE or in trip. If the required channels cannot be restored to OPERABLE status or placed in trip, Condition C must be entered and its Required Action taken.

The 2 hour Completion Time is sufficient for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of feedwater and main turbine high water level trip instrumentation occurring during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With the required channels not restored to OPERABLE status or placed in trip, THERMAL POWER must be reduced to < 24% RTP within 4 hours. Alternatively, the affected feedwater pump(s) and affected main turbine valve(s) may be removed from service since this performs the intended function of the instrumentation. As discussed in the Applicability section of the Bases, operation below 24% RTP results in sufficient margin to the required limits, and the feedwater and main turbine high water level trip instrumentation is not required to protect fuel integrity during the feedwater controller failure, maximum demand event. The allowed Completion Time of 4 hours is based on operating experience to reduce THERMAL POWER to < 24% RTP from full power conditions in an orderly manner and without challenging plant systems.

Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable feedwater pump valve or main turbine stop valve. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to EOC-RPT instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable EOC-RPT instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable EOC-RPT instrumentation channel.

A.1 and A.2

With one or more [required](#) channels inoperable, but with EOC-RPT trip capability maintained (refer to Required Actions B.1 and B.2 Bases), the EOC-RPT System is capable of performing the intended function. However, the reliability and redundancy of the EOC-RPT instrumentation is reduced such that a single failure in the remaining trip system could result in the inability of the EOC-RPT System to perform the intended function. Therefore, only a limited time is allowed to restore compliance with the LCO. Because of the diversity of sensors available to provide trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse Functions, and the low probability of an event requiring the initiation of an EOC-RPT, 72 hours is provided to restore the inoperable channels (Required Action A.1) or apply the EOC-RPT inoperable MCPR limit. Alternately, the inoperable channels may be placed in trip (Required Action A.2), since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted [in Required Action A.2](#), placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable breaker, since this may not adequately compensate for the inoperable breaker (e.g., the breaker may be inoperable such that it will not open). If it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an RPT, or if the inoperable channel is the result of an inoperable breaker), Condition C must be entered and its Required Actions taken.

(continued)

BASES

ACTIONS
(continued)

B.1 and B.2

Required Actions B.1 and B.2 are intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in the Function not maintaining EOC-RPT trip capability. A Function is considered to be maintaining EOC-RPT trip capability when sufficient channels are OPERABLE or in trip, such that the EOC-RPT System will generate a trip signal from the given Function on a valid signal and both recirculation pumps can be tripped. Alternately, Required Action B.2 requires the MCPR limit for inoperable EOC-RPT, as specified in the COLR, to be applied. This also restores the margin to MCPR assumed in the safety analysis.

The 2 hour Completion Time is sufficient time for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of the EOC-RPT instrumentation during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With any Required Action and associated Completion Time not met, THERMAL POWER must be reduced to < 27.6% RTP within 4 hours. Alternately, the associated recirculation pump may be removed from service, since this performs the intended function of the instrumentation. The allowed Completion Time of 4 hours is reasonable, based on operating experience, to reduce THERMAL POWER to < 27.6% RTP from full power conditions in an orderly manner and without challenging plant systems.

[Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.](#)

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOC-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered

(continued)

BASES

ACTIONS

C.1 (continued)

The description of a Function maintaining ATWS-RPT trip capability is discussed in the Bases for Required Action B.1 above.

The 1 hour Completion Time is sufficient for the operator to take corrective action and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period.

D.1 and D.2

With any Required Action and associated Completion Time not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 2 within 6 hours (Required Action D.2). Alternately, the associated recirculation pump may be removed from service since this performs the intended function of the instrumentation (Required Action D.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

[Required Action D.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.](#)

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

(continued)

BASES

ACTIONS

B.1 (continued)

not maintained). Therefore, continued operation is only permitted for a 2 hour period, during which feedwater and main turbine high water level trip capability must be restored. The trip capability is considered maintained when sufficient channels are OPERABLE or in trip such that the feedwater and main turbine high water level trip logic will generate a trip signal on a valid signal. This requires two channels to each be OPERABLE or in trip. If the required channels cannot be restored to OPERABLE status or placed in trip, Condition C must be entered and its Required Action taken.

The 2 hour Completion Time is sufficient for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of feedwater and main turbine high water level trip instrumentation occurring during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With the required channels not restored to OPERABLE status or placed in trip, THERMAL POWER must be reduced to < 24% RTP within 4 hours. Alternatively, the affected feedwater pump(s) and affected main turbine valve(s) may be removed from service since this performs the intended function of the instrumentation. As discussed in the Applicability section of the Bases, operation below 24% RTP results in sufficient margin to the required limits, and the feedwater and main turbine high water level trip instrumentation is not required to protect fuel integrity during the feedwater controller failure, maximum demand event. The allowed Completion Time of 4 hours is based on operating experience to reduce THERMAL POWER to < 24% RTP from full power conditions in an orderly manner and without challenging plant systems.

Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable feedwater pump valve or main turbine stop valve. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to EOC-RPT instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable EOC-RPT instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable EOC-RPT instrumentation channel.

A.1 and A.2

With one or more [required](#) channels inoperable, but with EOC-RPT trip capability maintained (refer to Required Actions B.1 and B.2 Bases), the EOC-RPT System is capable of performing the intended function. However, the reliability and redundancy of the EOC-RPT instrumentation is reduced such that a single failure in the remaining trip system could result in the inability of the EOC-RPT System to perform the intended function. Therefore, only a limited time is allowed to restore compliance with the LCO. Because of the diversity of sensors available to provide trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse Functions, and the low probability of an event requiring the initiation of an EOC-RPT, 72 hours is provided to restore the inoperable channels (Required Action A.1) or apply the EOC-RPT inoperable MCPR limit. Alternately, the inoperable channels may be placed in trip (Required Action A.2), since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted [in Required Action A.2](#), placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable breaker, since this may not adequately compensate for the inoperable breaker (e.g., the breaker may be inoperable such that it will not open). If it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an RPT, or if the inoperable channel is the result of an inoperable breaker), Condition C must be entered and its Required Actions taken.

(continued)

BASES

ACTIONS
(continued)

B.1 and B.2

Required Actions B.1 and B.2 are intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in the Function not maintaining EOC-RPT trip capability. A Function is considered to be maintaining EOC-RPT trip capability when sufficient channels are OPERABLE or in trip, such that the EOC-RPT System will generate a trip signal from the given Function on a valid signal and both recirculation pumps can be tripped. Alternately, Required Action B.2 requires the MCPR limit for inoperable EOC-RPT, as specified in the COLR, to be applied. This also restores the margin to MCPR assumed in the safety analysis.

The 2 hour Completion Time is sufficient time for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of the EOC-RPT instrumentation during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With any Required Action and associated Completion Time not met, THERMAL POWER must be reduced to < 27.6% RTP within 4 hours. Alternately, the associated recirculation pump may be removed from service, since this performs the intended function of the instrumentation. The allowed Completion Time of 4 hours is reasonable, based on operating experience, to reduce THERMAL POWER to < 27.6% RTP from full power conditions in an orderly manner and without challenging plant systems.

[Required Action C.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.](#)

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOC-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered

(continued)

BASES

ACTIONS

C.1 (continued)

The description of a Function maintaining ATWS-RPT trip capability is discussed in the Bases for Required Action B.1 above.

The 1 hour Completion Time is sufficient for the operator to take corrective action and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period.

D.1 and D.2

With any Required Action and associated Completion Time not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 2 within 6 hours (Required Action D.2). Alternately, the associated recirculation pump may be removed from service since this performs the intended function of the instrumentation (Required Action D.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

[Required Action D.1 is modified by a Note which states that the Required Action is only applicable if the inoperable channel is the result of an inoperable RPT breaker. The Note clarifies the situations under which the associated Required Action would be the appropriate Required Action.](#)

SURVEILLANCE
REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

(continued)