Xcel Energy®

Monticello Nuclear Generating Plant
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April 4, 2014

L-MT-14-009
10 CFR 50.90

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

Monticello Nuclear Generating Plant
Docket 50-263
Renewed Facility Operating License No. DPR-22

License Amendment Request: Revision to Required Actions for Technical Specification 3.5.1, Emergency Core Cooling System (ECCS)

Pursuant to 10 CFR 50.90, Northern States Power Company – Minnesota (NSPM), doing business as Xcel Energy, Inc., proposes to revise the Required Action for Monticello Nuclear Generating Plant (MNGP) Technical Specification (TS) 3.5.1, "ECCS – Operating," for when both Core Spray subsystems are inoperable.

Specification 3.5.1, Condition F, provides a 72 hour Completion Time to restore one Core Spray subsystem to Operable status, when both Core Spray subsystems are inoperable. This 72 hour Completion Time was predicated on an approved Completion Time for a similar Boiling Water Reactor. Operation of at least one Core Spray subsystem is necessary post-accident to maintain adequate long-term core cooling. Consequently, this License Amendment Request (LAR) proposes to remove Condition F from the MNGP TS.

The guidance of NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," is being applied until this condition is resolved with approval of this LAR and implementation. Corrective actions have been taken for the interim period between identification and resolution to ensure conservative operation.

Enclosure 1 provides a description of the proposed changes and includes the technical evaluation and associated no significant hazards determination and environmental evaluation. Enclosure 2 provides a marked-up copy of the existing TS pages showing the proposed changes.

NSPM requests approval of this proposed license amendment request by April 15, 2015, with the amendment being implemented within 90 days of NRC approval.

In accordance with 10 CFR 50.91(a)(1), the analysis about the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is being provided to the Commission.

The MNGP Plant Operations Review Committee has reviewed this application. In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated Minnesota Official.

Should you have questions regarding this letter, please contact Mr. Richard Loeffler at (763) 295-1247.

Summary of Commitments

This letter proposes no new commitments and does not revise any existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on April 4, 2014.

Karen D. Fili
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosures (2)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce

ENCLOSURE 1

MONTICELLO NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST

REVISION TO REQUIRED ACTIONS FOR TECHNICAL SPECIFICATION 3.5.1, EMERGENCY CORE COOLING SYSTEM

DESCRIPTION OF CHANGES

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DESCRIPTION OF CHANGES

REVISION TO REQUIRED ACTIONS FOR TECHNICAL SPECIFICATION 3.5.1, EMERGENCY CORE COOLING SYSTEM

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, Northern States Power Company – Minnesota (NSPM), doing business as Xcel Energy, Inc., proposes to revise the Required Action in Monticello Nuclear Generating Plant (MNGP) Technical Specification (TS) 3.5.1, "ECCS – Operating," pertaining to the condition for when both Core Spray subsystems are inoperable. Specification 3.5.1, Condition F, provides a 72 hour Completion Time to restore one Core Spray subsystem to Operable status when both Core Spray subsystems are inoperable. This 72 hour Completion Time was predicated on an approved Completion Time for a similar Boiling Water Reactor for the same situation. This License Amendment Request (LAR) proposes to remove Condition F from the MNGP TS for the reasons summarized below.

In April 2013 while in the 2013 Refueling Outage (RFO) it was questioned whether the 72 hour duration for this Completion Time was appropriate for this situation, i.e., both Core Spray subsystems inoperable. Operation of one Core Spray subsystem is necessary post-accident to maintain adequate long-term core cooling. While the acceptability of a 72 hour Completion Time for having both Core Spray subsystems inoperable during the short-term phase of an accident had been presented in the license amendment request (LAR), the impact on long-term core cooling capability had not been presented to the NRC for consideration as part of the review for Amendment 162.

The guidance of NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That are Insufficient to Assure Plant Safety," is being applied until this condition is resolved with approval of this license amendment request (LAR). Corrective actions have been put-in-place for the interim period between the identification and resolution of this condition to ensure conservative operation.

2.0 DETAILED DESCRIPTION

It is proposed to reduce the Completion Time stated in Specification 3.5.1, Condition F, for when both Core Spray subsystems are inoperable, as indicated below.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~F. Both Core Spray subsystems inoperable.~~	~~F.1 Restore one Core Spray subsystem to OPERABLE status.~~	~~72 hours~~

The mark-up of the proposed changes to the Completion Time for Specification 3.5.1, Condition F, is provided in Enclosure 2. The necessary TS Bases changes will be issued in accordance with Specification 5.5.9, "Technical Specification TS Bases Control Program," following approval of this LAR.

3.0 DESCRIPTION OF THE CORE SPRAY SYSTEM

Two independent Core Spray subsystems are provided as a part of the Core Spray System. Each subsystem consists of one 100 percent-capacity centrifugal pump driven by an electric motor, a spray sparger in the reactor vessel above the core, piping and valves to convey water from the suppression pool to the sparger, and the associated controls and instrumentation. Suction water can also be supplied from the Condensate Storage Tank. In the case of low-low water level in the reactor vessel plus low reactor vessel pressure, or high pressure in the drywell, or low-low reactor water level sustained for 18 minutes (Allowable Value), the Core Spray System, when reactor vessel pressure is low enough, automatically sprays water onto the top of the fuel assemblies at a sufficient flow rate to cool the core and limit fuel cladding temperature.

The Core Spray System can provide protection to the core for the largest break in the reactor coolant pressure boundary (the double-ended recirculation line break). If the High Pressure Coolant Injection (HPCI) System fails, it is backed up by the Automatic Depressurization (ADS) System in combination with the Low Pressure Coolant (LPCI) System and the Core Spray System. Once the ADS timed sequence times out, selected safety relief valves would be opened to depressurize the reactor coolant system sufficiently to allow LPCI and Core Spray to inject into the vessel.

4.0 TECHNICAL ANALYSIS

In June 2008 (Reference 1), NSPM proposed a LAR to revise the existing Conditions and Required Actions of Specification 3.5.1 to add several new Required Actions (and associated Completion Times). This was done to fully align, in accordance with the MNGP ECCS single failure analysis, for the inoperability of selected combinations of low-pressure ECCS subsystems for which no Required Actions were then specified. Identification of these proposed Conditions was based on purely deterministic considerations, the MNGP ECCS single failure analysis, and existing licensing precedents for other BWR units. One of the added conditions was Condition F, which revised Specification 3.5.1 to provide a 72 hour Completion Time for when both Core Spray subsystems were inoperable. This change was approved by the NRC as Amendment No. 162, dated July 10, 2009 (Reference 2).

During the 2013 Refueling Outage (RFO), it was questioned how would long-term core cooling be maintained (post-accident) with both Core Spray subsystems inoperable. This condition was entered into the MNGP Corrective Action Program and appropriate controls have been put in place to prevent utilization of Condition F until this condition has been corrected, described in more detail below.

The MNGP Updated Safety Analysis Report (USAR) Section 14.7.2.3.2, "Single Failure Considerations, discusses the acceptability of the plant design with respect to the response to a LOCA, considering the most limiting combination of break size, location, and single failures. Another portion of the USAR, Section 14.7.2.3.6, "Long Term Core Cooling Performance," addresses compliance with the 10 CFR 50.46 long-term cooling criterion, which is discussed in Subsection 4.2 of this LAR. Operation of one Core Spray subsystem is necessary, post-accident, to maintain adequate long-term core cooling for a spectrum of large recirculation line breaks when there is a top-peaked axial power distribution in the core during the operating cycle if a design basis Loss of Coolant Accident were to occur. While the acceptability of a 72 hour Completion Time for having both Core Spray subsystems inoperable during the short-term phase of an accident had been presented in the LAR, the impact on long-term core cooling capability had not been established for consideration as part of the NRC review for Amendment 162.

This condition is being controlled applying the guidance of NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That are Insufficient to Assure Plant Safety," until this condition is resolved with approval and implementation of this LAR. The current 72 hour Completion Time allowance of Condition F for when both Core Spray subsystems are inoperable is not being applied. An Operations Memo describing this situation and an explicit administrative "flag" on the TS page provides positive indication and controls to operations personnel so that Condition F is not utilized. The operators have been directed to not enter Condition F which results in entry into LCO 3.0.3 instead (an appropriate action), until this condition is resolved. A review of plant records for the Core Spray System did not identify any instances in

which both Core Spray subsystems have been inoperable, when required by the Applicability of the specification, since the amendment was approved in July 2009. A review of the considerations (i.e., those applicable to the Core Spray System) from the June 2008 MNGP LAR is presented below.

4.1 Discussion of the MNGP ECCS (Short-term) Accident Analysis Assumptions

The General Electric SAFER/GESTR set of computer codes (Reference 3) are the evaluation model used for ECCS LOCA licensing basis analysis performed for the MNGP. The ECCS-LOCA analysis (References 4, 5, and 6) performed for the MNGP considered the most limiting combination of piping break sizes, locations, and single failures to assure ECCS performance following a postulated LOCA meets the criteria set forth in 10 CFR 50.46. The ECCS-LOCA analysis was performed assuming the single failures presented in Updated Safety Analysis Report (USAR) Table 14.7-11. USAR Section 14.7.2.3.2, "Single Failure Considerations," states:

> In order to determine the acceptability of the response to a LOCA, the most limiting combination of break size, location, and single failure must be determined. The single failures that are considered must reflect any failure of an ECCS component or support system which might be postulated to occur during a LOCA.

The single failure in the LOCA analysis is considered in conjunction with the unavailability of offsite power. The ECC Systems remaining available following a single failure are shown below and are taken from USAR Table 14.7-11.

USAR Table 14.7-11 - Single Failures and Available Systems

Break Location	Single Failure	Systems Available[1]
Recirc Suction	None	2CS+4LPCI+HPCI+ADS
Recirc Suction	DC Power	1CS+2LPCI+ADS
Recirc Suction	Diesel Generator	1CS+2LPCI+HPCI+ADS
Recirc Suction	LPCI Injection Valve	2CS+HPCI+ADS
Recirc Suction	HPCI System	2CS+4LPCI+ADS
Core Spray Line	DC Power	2LPCI+ADS

1 Core Spray (CS), Low Pressure Coolant Injection (LPCI), High Pressure Coolant Injection (HPCI), Automatic Depressurization System (ADS)

Break Location	Single Failure	Systems Available[1]
Feedwater Line	DC Power	1CS+2LPCI+ADS
Steamline	DC Power	1CS+2LPCI+ADS

Note that during the timeframe under a TS Required Action, an additional single failure is not postulated; the Required Actions involve a temporary suspension of the single failure criterion.

4.2 Core Spray System Impact on Long-Term Core Cooling

USAR Section 14.7.2.3.6, "Long Term Core Cooling Performance," discusses compliance with the long-term cooling criterion. An excerpt of the long-term cooling considerations for Monticello from USAR Section 14.7.2.3.6 is presented below:

- Recirculation Line Breaks. When the core refloods following the postulated LOCA, the fuel rods will return quickly to saturation temperature over their entire length. For large pipe breaks, the heat flux in the core will eventually be inadequate to maintain a two-phase waterflow over the entire length of the core since the static water level inside the core shroud is approximately that of the jet pump suctions. So long as one core spray loop is available, the upper third of the core will remain wetted by the core spray water and there will be no further perforation or metal-water reaction. Table 14.7-11 summarizes the ECCS systems available for all limiting break locations and limiting ECCS single failures.

- Recirculation Line Break with LPCI Injection Into Recirculation Piping. Even if a core spray loop is not available long-term, with axial power peaking at mid-plane or lower, the upper region of the core will be cooled by convection to the steam generated in the still-covered region and cladding temperatures will not reach values resulting in further perforation, significant additional oxidation, or significant additional metal-water reaction. Fuel management strategies resulting in axial power peaking above mid-plane require operation of at least one core spray pump to assure adequate core cooling. At least one LPCI System is available except for a recirculation line break with failure of the LPCI injection valve. In this case, two core spray loops will be available.

- Pipe Breaks Other Than in the Recirculation System. The reactor vessel refloods for all pipe breaks other than the recirculation system, and the fuel cladding quickly cools to saturation temperature. No further perforation or metal-water reaction will result.

As discussed above, there are some scenarios where having the Core Spray System out-of-service from both a short-term and a long-term cooling perspective is acceptable.

One of the bases for adding Condition F to the MNGP TS (both Core Spray subsystems inoperable for 72 hours) was the prior NRC approval of this same condition for another licensee. This other plant is of the BWR/4 design, with the same complement of ECCS systems, as the MNGP. The changes for that licensee were in-part based upon a Probabilistic Risk Assessment (PRA) performed supporting their ITS conversion. NSPM cannot ascertain whether the long-term impact of having both Core Spray subsystems was considered. Consequently, NSPM has determined that an allowance to have both Core Spray subsystems inoperable is inappropriate for the MNGP. Hence, NSPM proposes to remove Condition F from the MNGP TS.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration Determination

In accordance with the requirements of 10 CFR 50.90, Northern States Power Company – Minnesota (NSPM), doing business as Xcel Energy, Inc., proposes to revise Specification 3.5.1, Condition F to reduce the specified Completion Time when both Core Spray subsystems are inoperable.

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 Core Spray subsystems are designed to inject/spray the core after any size break up to and including a design basis Loss of Coolant Accident (LOCA). The proposed change to revise the Completion Time, does not change the conditions, operating configurations, or the minimum amount of operating equipment assumed in the safety analysis for accident mitigation. No change is proposed to the manner in which the Core Spray System provides plant protection or which would create new modes of plant operation.

The proposed change will not affect the probability of any event initiators. There will be no degradation in the performance of, or an increase in the number of challenges imposed on, safety related equipment assumed to

function during an accident situation. There will be no change to normal plant operating parameters or accident mitigation performance.

Therefore, it is concluded that this 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.

There is no hardware change nor is there a change in the method by which any plant systems perform a safety function. This request does not affect the normal method of plant operation.

The proposed change does not introduce new equipment, which could create a new or different kind of accident. No new external threats, release pathways, or equipment failure modes are created. No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of this request.

Therefore, it is concluded that this 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 Core Spray subsystems are capable of providing water and removing heat loads to satisfy the Updated Safety Analysis Report requirements for accident mitigation or unit safe shutdown.

There will be no change to the manner in which the safety limits or limiting safety system settings are determined nor is there change to those plant systems necessary to assure the accomplishment of protection functions. Therefore, it is concluded that the change does not involve a significant reduction in a margin of safety.

Based on the above, NSPM concludes that the proposed changes present 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.

5.2 Applicable Regulatory Requirements

10 CFR 50.46

As discussed in USAR Section 14.7.2.3.6, "Long Term Core Cooling Performance," the NRC acceptance criteria for ECCS performance is contained in 10 CFR 50.46(b). Criterion (b)(5) states:

> After any calculated successful initial operation of the ECCS, the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for the extended period of time required by the long-lived radioactivity remaining in the core.

Documentation of compliance with Criterion (b)(5) was performed generically for all BWRs by NEDO-20566A (Reference 4). For MNGP, at least one Core Spray subsystem is required to provide adequate long-term core cooling, and is bounded by the existing MNGP ECCS single failure analysis. As discussed in USAR Section 14.7.2.3.6, the NRC acceptance criteria for ECCS performance contained in 10 CFR 50.46, Criterion (b)(5) for long term cooling continues to be met.

General Design Criteria

MNGP was designed largely before the publishing of the 70 GDC for Nuclear Power Plant Construction Permits proposed by the Atomic Energy Commission (AEC) for public comment in July 1967, and constructed prior to the 1971 publication of the 10 CFR 50, Appendix A, GDC. As such, MNGP was not licensed to the Appendix A, GDC.

The MNGP USAR, Section 1.2, lists the Principal Design Criteria (PDC) for the design, construction and operation of the plant. MNGP USAR Appendix E provides a plant comparative evaluation to the 70 proposed AEC design criteria. It was concluded that the plant conforms to the intent of the GDC. GDCs and PDCs directly associated with the Core Spray System are presented below.

PDC 1.2.3 - Reactor Core Cooling

b. Heat removal systems are provided to remove decay heat generated in the reactor core under circumstances wherein the normal operational heat removal systems become inoperative. The capacity of such systems is adequate to prevent fuel clad damage.

c. Redundant heat removal systems are provided to preserve reactor core heat transfer geometry following various postulated design basis loss-of-coolant accidents.

The applicable 70 Draft AEC General Design Criteria (AEC-GDC) are:

Criterion 37 - Engineered Safety Features Basis for Design (Category A)

Engineered safety features shall be provided in the facility to back up the safety provided by the core design, the reactor coolant pressure boundary, and their protection systems. As a minimum, such engineered safety features shall be designed to cope with any size reactor pressure boundary break up to and including the circumferential rupture of any pipe in that boundary assuming unobstructed discharge from both ends.

Criterion 44 - Emergency Core Cooling System Capability (Category A)

At least two emergency core cooling systems, preferably of different design principles, each with a capability for accomplishing abundant emergency core cooling, shall be provided. Each emergency core cooling system and the core shall be designed to prevent fuel and clad damage that would interfere with the emergency core cooling function and to limit the clad metal-water reaction to negligible amounts of all sizes of breaks in the reactor coolant pressure boundary, including the double-ended rupture of the largest pipe. The performance of each emergency core cooling system shall be evaluated conservatively in each area of uncertainty. The systems shall not share active components and shall not share other features or components unless it can be demonstrated that (a) the capability of the shared feature or components to perform its required function can be readily ascertained during reactor operation, (b) failure of the shared feature or component does not initiate a loss-of-coolant accident, and (c) capability of the shared feature or component to perform its required function is not impaired by the effects of a loss-of-coolant accident and is not lost during the entire period this function is required following the accident.

10 CFR 50, Appendix A, General Design Criteria

Criterion 35 - Emergency core cooling.

A system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented and (2) clad metal-water reaction is limited to negligible amounts.

Suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

NSPM has evaluated the proposed changes against the applicable regulatory requirements and acceptance criteria. The technical analysis concludes that the proposed TS changes will continue to assure that the design requirements and acceptance criteria for MNGP are met. Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL EVALUATION

The proposed changes 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 changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed changes 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 changes.

7.0 REFERENCES

1. NSPM Letter to NRC, L-MT-08-034, "License Amendment Request: Revision to Required Actions for Specification 3.5.1, Emergency Core Cooling System," dated June 26, 2008.

2. NRC Letter to NSPM, "Monticello Nuclear Generating Plant (MNGP) – Issuance of Amendment regarding Completion Time to Restore a Low-Pressure Emergency Core Cooling Subsystem to Operable Status (TAC No. MD9170)," dated July 10, 2009.

3. NRC letter (C. 0. Thomas) to GE (J. F. Quirk), "Acceptance for Referencing of Licensing Topical Report NEDE-23785P, Revision 1, Volume III (P), The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Flow Accident," June 1, 1984.

4. GE Nuclear Energy, NEDC-32514P, Revision 1, "Monticello Nuclear Generating Plant SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," dated October 1997.

5. GE Nuclear Energy, GE-NE-J1103878-09-02P, "Monticello ECCS-LOCA Evaluation for GE14," August 2001.

6. NEDO-20566A, "General Electric Company Analytical Model for Loss-Of-Coolant Analysis in accordance with 10CFR50 Appendix K – Volume 2," September, 1986.

ENCLOSURE 2

MONTICELLO NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST

REVISION TO REQUIRED ACTIONS FOR TECHNICAL SPECIFICATION 3.5.1, EMERGENCY CORE COOLING SYSTEM

MARKED-UP TECHNICAL SPECIFICATION PAGES

(4 pages follow)

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS) AND REACTOR CORE ISOLATION COOLING SYSTEM (RCIC)

3.5.1 ECCS - Operating

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

---NOTE---
Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the Residual Heat Removal (RHR) shutdown cooling supply isolation interlock in MODE 3, if capable of being manually realigned and not otherwise inoperable.

APPLICABILITY: MODE 1,
MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure $\leq$ 150 psig.

ACTIONS

---NOTE---
LCO 3.0.4.b is not applicable to HPCI.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LPCI pump inoperable.	A.1 Restore LPCI pump to OPERABLE status.	30 days
B. One LPCI subsystem inoperable for reasons other than Condition A. OR One Core Spray subsystem inoperable.	B.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days

No Changes. Page included for Information.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One LPCI pump in both LPCI subsystems inoperable.	C.1 Restore one LPCI pump to OPERABLE status.	7 days
D. Two LPCI subsystems inoperable for reasons other than Condition C or G ~~H~~.	D.1 Restore one LPCI subsystem to OPERABLE status.	72 hours
E. One Core Spray subsystem inoperable. AND One LPCI subsystem inoperable. OR One or two LPCI pump(s) inoperable.	E.1 Restore Core Spray subsystem to OPERABLE status. OR E.2 Restore LPCI subsystem to OPERABLE status. OR E.3 Restore LPCI pump(s) to OPERABLE status.	72 hours 72 hours 72 hours
~~F. Both Core Spray subsystems inoperable.~~	~~F.1 Restore one Core Spray subsystem to OPERABLE status.~~	~~72 hours~~
F ~~G~~. Required Action and associated Completion Time of Condition A, B, C, D, or E~~, or F~~ not met.	F ~~G~~.1 Be in MODE 3. AND F ~~G~~.2 Be in MODE 4.	12 hours 36 hours
G ~~H~~. Two LPCI subsystems inoperable due to open RHR intertie return line isolation valve(s).	G ~~H~~.1 Isolate the RHR intertie line.	18 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
H ~~I~~. Required Action and associated Completion Time of Condition G ~~H~~ not met.	H ~~I~~.1	Be in MODE 2.	6 hours
I ~~J~~. HPCI System inoperable.	I ~~J~~.1	Verify by administrative means RCIC System is OPERABLE.	Immediately
	AND		
	I ~~J~~.2	Restore HPCI System to OPERABLE status.	14 days
J ~~K~~. HPCI System inoperable.	J ~~K~~.1	Restore HPCI System to OPERABLE status.	72 hours
AND	OR		
Condition A, B, or C entered.	J ~~K~~.2	Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.	72 hours
K ~~L~~. One ADS valve inoperable.	K ~~L~~.1	Restore ADS valve to OPERABLE status.	14 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
L ~~M~~. Required Action and associated Completion Time of Condition I, J, or K~~, or L~~ not met. OR One ADS valve inoperable and Condition A, B, C, D, or G ~~H~~ entered. OR Two or more ADS valves inoperable. OR HPCI System inoperable and Condition D, E, ~~F,~~ or G ~~H~~ entered.	L ~~M~~.1 Be in MODE 3. AND L ~~M~~.2 Reduce reactor steam dome pressure to ≤ 150 psig.	12 hours 36 hours
M ~~N~~. Two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition C, D, E, ~~F,~~ or G ~~H~~. OR HPCI System and one or more ADS valves inoperable.	M ~~N~~.1 Enter LCO 3.0.3.	Immediately