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PROPRIETARY INFORMATION – WITHHOLD UNDER 10 CFR 2.390

10 CFR 50.90

NMP2L2695

December 7, 2018

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

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NPF-69
NRC Docket No. 50-410

Subject: Supplement Information and Response to Request for Additional Information by the Office of Nuclear Reactor Regulation to support Review of an Emergency License Amendment Request for One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances

Reference:
1. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Emergency License Amendment Request – One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances," dated December 6, 2018
2. Electronic mail from M. Marshall (Senior Project Manager, U.S. Nuclear Regulatory Commission) to R. Reynolds (Exelon), Nine Mile Point, Unit 2- Request for Additional Information regarding Emergency Tech Spec Change RE HPCS Completion Time (L-2018-LLA-0491)," dated December 7, 2018

By letter dated December 6, 2018, (Reference 1) Exelon Generation Company, LLC (Exelon) requested a one-time change to the Nine Mile Point Unit 2 (NMP2) Technical Specifications (TS) under an emergency basis in accordance with 10 CFR 50.91(a)(5). The proposed amendment request would apply a one time change to the Completion Time for TS 3.5.1, required Action B.2 from 14 days to 35 days.

By electronic mail dated December 7, 2018 (Reference 2), the NRC identified areas where additional information was necessary to complete the review.

Attachment 1 to this letter contains the NRC's request for additional information immediately followed by Exelon's response. Attachment 2 contains supplemental information for clarification to portions of Reference 1. Attachment 3 contains the proprietary version of GE Report 005N0847-P, Revision 1, with corresponding affidavit as supplemental information.

**Attachment 3 transmitted herewith contains Proprietary Information.
When separated from Attachment 3, this document is decontrolled.**

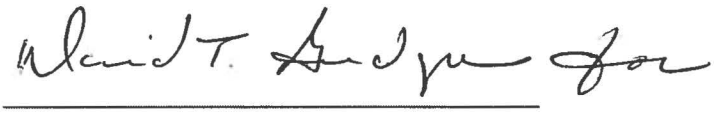
Attachment 4 contains the Non-Proprietary version of GE Hitachi Nuclear Energy Report 005N0847-NP, Revision 1. Attachment 5 contains a revised complete set of marked up TS pages. Attachment 6 contains a revised complete set of clean TS pages.

Exelon has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. The supplemental information attached to this letter does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the supplemental information attached to this letter does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no commitments contained in this response.

If you should have any questions regarding this submittal, please contact Ron Reynolds at 610-765-5247.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 7th day of December 2018.



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment 1: Response to Request for Additional Information
Attachment 2: Supplemental Information
Attachment 3: GE Hitachi Nuclear Energy Report 005N0847-P, Revision 1 (Proprietary Information)
Attachment 4: GE Hitachi Nuclear Energy Report 005N0847-NP, Revision 1 (Non-Proprietary Information)
Attachment 5: Revised Markup of Proposed Technical Specification Pages
Attachment 6: Revised Technical Specification Clean Pages

cc:	USNRC Region I Regional Administrator	w/attachments (excluding Attachment 3)
	USNRC Senior Resident Inspector – NMP	"
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bcc:	Senior Vice President - Mid-Atlantic Operations	w/o attachments
	Site Vice President - NMP	"
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	Plant Manager - NMP	"
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	Manager, Licensing, KSA	"
	Manager, Fuels, KSA	"
	R. Reynolds, KSA	"
	Commitment Coordinator - KSA	"
	Correspondence Control Desk - KSA	"

ATTACHMENT 1

Nine Mile Point Nuclear Station, Unit 2
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NRC Docket No. 50-410

Response to Request for Additional Information

RAI 1:

In accordance with 10 CFR 50.90, licensees must fully describe proposed changes in license amendment request. In the third paragraph of page two of the letter dated December 6, 2018, Exelon indicates that the proposed change to the completion time for an inoperable high pressure core spray system would be a one-time extension. However, neither the amendment request nor the footnote on technical specification (TS) mark-up page 3.5.1-1 explicitly indicate that the revised completion time is a one-time change and could be mistakenly interrupted as a permanent – not a one-time change. Clarify whether the amendment request is for a one-time extension and describe any necessary changes to the footnote.

Exelon Response to RAI 1:

This amendment request is for a one-time extension of the affected Completion Time. The referenced footnote to LCO 3.5.1 is revised as follows:

> "* A one-time change to this Completion Time from 14 days to 35 days due to the HPCS DG replacement has been approved via Emergency LAR. This Completion Time expires on 12/31/2018 at 0100."

RAI 2:

In accordance with 10 CFR 50.90, licensees must fully describe proposed changes in license amendment request. On pages 11 and 12 of the license amendment request, Exelon list the surveillance requirements (SRs) that may be delayed until January 11 or 18, 2019 to support replacement of the HPCS DG. The frequencies for these SRs are controlled by the Surveillance Frequency Control Program (SFCP) at Nine Mile Point 2. Because the frequencies of these SRs are controlled by the SFCP, the current surveillance interval is not included in Nine Mile Point Technical Specifications, so the magnitude of the proposed delay for each SR is unclear. For each of the SRs listed on page 11 and 12, provide:

a. The current surveillance frequency.
b. The date that the surveillance is scheduled to be completed during the replacement of the HPCS DG, including the 25 percent grace permitted by Nine Mile Point 2 TS.

Exelon Response to RAI 2:

The magnitude of the change to each Surveillance Requirement is summarized in the following table:

NOTE: The following surveillances will be completed as soon as practicable within the divisional week following return of the HPCS System to OPERABLE but no later than the dates committed to below.

Surveillance Requirements Procedure	Surveillance Frequency	Current Scheduled Date	125% Grace Date (LED)	Complete No Later than:	Maximum Days Past LED
N2-OSP-EGS-M@001 (Division I) • SR 3.8.1.2 – Diesel Voltage and Frequency (Standby Start) • SR 3.8.1.3 – Diesel Synchronization and Loading • SR 3.8.1.4 – Diesel Day Tank Fuel Oil • SR 3.8.1.5 – Day Tank Water Accumulation • SR 3.8.1.13 – Diesel Voltage and Frequency (Hot Restart) • SR 3.8.1.6 – Fuel Oil Transfer System • SR 3.8.3.1 – Fuel Oil Storage Tank • SR 3.8.3.3 – Diesel Fuel Oil Properties • SR 3.8.3.5 – Fuel Oil Storage Tank Water Accumulation	31 Days	12/13/18	12/20/18	1/18/19	29 Days
N2-OSP-EGS-M@001 (Division II) • (Same SRs as Division I)	31 Days	12/4/18	12/11/18	1/18/19	38 Days
CY-NM-210-500 (Division I) • SR 3.8.3.3 – Diesel Fuel Oil Properties	31 Days	12/13/18	12/20/18	1/18/19	29 Days
N2-ESP-ENS-Q731 • SR 3.3.5.1.2 - CHANNEL FUNCTIONAL TEST for TS 3.3.5.1-.1 Functions 2.e, 2.f, 2.g, and 2.h. • SR 3.3.5.1.5 - CHANNEL CALIBRATION TS	92 Days	11/29/18	12/21/18	1/11/19	21 Days

Surveillance Requirements Procedure	Surveillance Frequency	Current Scheduled Date	125% Grace Date (LED)	Complete No Later than:	Maximum Days Past LED
3.3.5.1-.1 Functions 2.e, 2.f, 2.g, and 2.h. • SR 3.3.5.1.6 - LOGIC SYSTEM FUNCTIONAL TEST TS 3.3.5.1-.1 Functions 2.e, 2.f, 2.g, and 2.h. • SR 3.8.1.16 – Automatic Load Timer Relays for Division 2 Diesel					
N2-OSP-CSL-M001 • SR 3.5.1.1 – LPCS Gas Accumulation Monitoring	31 Days	12/20/18	12/27/18	1/11/19	15 Days
N2-OSP-ICS-M001 • SR 3.5.3.1 – RCIC Gas Accumulation Monitoring	31 Days	12/7/18	12/14/18	1/11/19	28 Days

RAI 3:

The requirements in 10 CFR 50.36(c)(2)(i) "Limiting conditions for operation" states, in part, that limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met. Each remedial (or required) action has a completion time associated with it. Exelon is proposing to extend the completion time for an inoperable HPCS DG from 14 days to 35 days, which is a 21 day extension. Additional details concerning the HPSC DG is needed to determine whether the requested extension is appropriate. Provide timeline major activities (e.g., arrival of replacement, installation of replacement, testing or replacement) to be completed as part of the HPCS DG replacement and justify that the additional time is appropriate.

Exelon Response to RAI 3:

The replacement of the diesel engine for the HPCS system involves the following major activities, with estimated completion dates.

- Arrival of the new diesel engine on site by December 8, 2018.
- Removal of the damaged diesel engine by December 10, 2018.

- Placement of the new diesel engine into the HPCS Diesel room by December 12, 2018
- Assembly and reconnection of support systems to the new diesel engine by December 18, 2018.
- Preparations to support running the new diesel engine for the first time complete by December 24, 2018.
- Testing of the new diesel engine and performance of surveillances to restore the HPCS system to Operable by December 29, 2018.
- This requested completion date and time includes approximately two (2) days of margin from the end of the scheduled activities to allow for contingencies not otherwise accounted for in the current schedule.

RAI 4:

The requirements in 10 CFR 50.36(c)(3), "Surveillance requirements," state in part that calibration are necessary to ensure quality of components and that facility operation will be within safety limits and limiting conditions of operation met. It is unclear if Functions 2.e, 2.f, 2.g, and 2.h, which are part of SR 3.3.5.1.5 - Channel Calibration, will drift out of calibration during the proposed extension.

a. Please provide the time period used for determining total drift in the uncertainty calculation associated with the allowable value for each function.
b. Please provide the total accumulated time from the last calibration until the end of the proposed calibration interval for each function.
c. Please provide a brief description of the available margin in the uncertainty calculation, and the amount used to address the additional time in the proposed surveillance interval extension.

Exelon Response to RAI 4:

a. The time period for determining total drift is 24 months based on data collected.
b. The total time accumulated from the last calibration to the end of the proposed calibration interval is 134 days.
c. Over the proposed timeframe, the relays are not expected to drift; therefore, there is no challenge to the available margin to the TS limits.

Extension of the SR 3.3.5.1.5, performed per N2-ESP-ENS-Q731 on a quarterly basis, for Division 2 ECCS systems will result in minimal drift of the associated timing relays. Based on data collected from past performances and calculations associated with relay drift conclude that for the AGASTAT Model 7000 and AGASTAT Model 7012 relays used in this application there is no measurable drift up to approximately 746 days (e.g. drift is time independent). Predicted drift values were further estimated out to a range of 900 days, with no significant drift expected (values again indicating no time dependency).

Currently N2-ESP-ENS-Q731 is performed on a quarterly basis, more frequently than specifically necessary per supporting analysis. Results from the past 24 months of performances were reviewed by NMP2 for additional confidence that empirical data supports calculation results. Results from the past 24 months of performance are consistent with calculation conclusions. The below table summarizes the findings:

All Times in Seconds

Date of Performance	LOOP RHR B	LOOP RHR C	LOOP+LOCA RHR B	LOOP+LOCA RHR C
12/8/2016	4.339	8.883	0.897	5.418
3/10/2017	4.35	8.98	0.9	5.5
6/8/2017	4.308	8.9	0.916	5.413
8/31/2017	4.35	9.09	0.91	5.45
12/7/2017	4.3	8.82	0.9	5.41
3/8/2018	4.34	9.07	0.9	5.5
6/7/2018	4.29	8.9	0.91	5.39
8/30/2018	4.33	9.04	0.92	5.39
Nominal Band	[4.1-5.0]	[8.2-10]	[0.85-0.97]	[5.18-5.72]
Tech. Spec Limit	(TS<=7)	(TS<=12)	(TS<=2)	(TS<=6.75)
Least As-Found Margin to TS Limit	2.65	2.91	1.08	1.25

Note: Shaded cells indicate the as-found values with the least margin to TS Limits.

NMP2 requests relief from the performance of the aforementioned SR until January 11, 2019; this will be 21 days past the SR 125 percent late end date. As the last performance was completed on August 30, 2018, the total time between performances will be 134 days. Based upon review of calculated and measured past drift, NMP2 has high confidence that any additional relay drift during the requested extension period will be minimal and non-consequential to equipment performance. Further, based on empirical data collected, there is sufficient evidence to conclude that margin to the required Technical Specification limits will be maintained during the extended SR window.

ATTACHMENT 2

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NFP-69
NRC Docket No. 50-410

Supplemental Information

In addition to the above mentioned RAIs Exelon is supplementing this amendment as follows:

1. Due to the non-intrusive nature of their testing methodologies, the following Surveillance Requirements extension requests will be retracted:

    - SR 3.8.3.2 – Lube Oil Inventory
    - SR 3.8.3.4 – Diesel starting Air Receive Pressure
    - SR 3.5.1.2 – LPCS Lineup Verification
    - SR 3.5.3.2 – RCIC Lineup Verification

2. The note explaining the extension of affected Technical Specification (TS) SR pages is revised for clarity as follows:

    *Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11 (18), 2019.

3. The note on TS markup page 3.8.1-16 was revised to reflect a date of January 11, 2019, to coincide with the completion stated on page 11 of 15 in the submittal dated December 6, 2018.

4. A Compensatory Measure for the HPCS Out of Service window included verification of the OPERABILITY of the RCIC System. RCIC OPERABILITY will continue to be verified during the extended LCO window with the exception of SR 3.5.3.1 which is being suspended by this request.

ATTACHMENT 4

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NFP-69
NRC Docket No. 50-410

GE Hitachi Nuclear Energy Report 005N0847-NP (Non-Proprietary Information)

HITACHI

GE Hitachi Nuclear Energy

005N0847-NP
Revision 1
December 2018

Non-Proprietary Information

Supplemental NMP2 LOCA Evaluation for HPCS DG OOS

INFORMATION NOTICE

This is a non-proprietary version of the document 005N0847-P Revision 1, which has the proprietary information removed. Portions of the document that have been removed are indicated by an open and closed bracket as shown here [[ ]].

IMPORTANT NOTICE REGARDING CONTENTS OF THIS REPORT

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REVISION SUMMARY

Revision	Revision Summary
0	Initial release
1	Revised for submittal to the NRC

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS

Acronym	Explanation
ADS	Automatic Depressurization System
AOR	Analysis of Record
BWROG	Boiling Water Reactor Owners' Group
CFR	Code of Federal Regulations
CLTP	Current Licensed Thermal Power
DEG	Double-Ended Guillotine
DG	Diesel Generator
ECCS	Emergency Core Cooling System
GEH	GE-Hitachi Nuclear Energy Americas LLC
HPCS	High Pressure Core Spray
LHGR	Linear Heat Generation Rate
LOCA	Loss-of-Coolant Accident
LPCI	Low Pressure Coolany Injection
LPCS	Low Pressure Core Spray
MELLLA+	Maximum Extended Load Line Limit Analysis
MLO	Maximum Local Oxidation
N/A	Not Applicable
NMP2	Nine Mile Point Unit 2
OOS	Out-of-Service
PCT	Peak Cladding Temperature

1.0 Background and Purpose

The Exelon Nine Mile Point Unit 2 (NMP2) plant experienced a Division III Diesel Generator (DG) (High Pressure Core Spray Diesel Generator (HPCS DG)) failure. An evaluation of the plant Loss-of-Coolant Accident (LOCA) response assuming the HPCS DG Out-of-Service (OOS) condition was performed and the results are presented in this report.

2.0 Analysis Procedure

The analysis procedure used in this report is the same as that described in the NMP2 GNF2 Emergency Core Cooling System (ECCS)-LOCA evaluation in Section 3.0 of Reference 1. The LOCA evaluation methodology is the SAFER/PRIME methodology described in the same report.

Two 10 Code of Federal Regulations (CFR) 50.46 Notification Letters, 2017-01 and 2017-02, apply to the Reference 1 analysis. Because both notifications have a zero degree effect on the Peak Cladding Temperature (PCT), they are not explicitly modeled in this analysis. Therefore, these two notifications are applied consistently to the analysis in this report and in the Reference 1 GNF2 analysis.

3.0 Inputs to the Analysis

The inputs to the analysis in this report are described in the NMP2 GNF2 ECCS-LOCA evaluation in Section 4.0 of Reference 1.

As documented in the LOCA Analysis of Record (AOR), Reference 1, and as summarized in Table 1, the limiting LOCA scenario for NMP2 is the recirculation suction line small break with a Division III DG (HPCS DG) single failure for both nominal and Appendix K conditions. Even though the limiting scenario is the small break of the recirculation suction line, the HPCS DG OOS condition is expected to affect both small and large break results. Therefore, this supplemental analysis addresses both small and large break limiting scenarios. The following two limiting scenarios are evaluated in this report:

(1) Large Break (Case: *Double-Ended Guillotine (DEG), Current Licensed Thermal Power (CLTP) / Maximum Extended Load Line Limit Analysis Plus (MELLLA+) Flow, Mid-Peak* from Table 3 in Reference 1). Both nominal and Appendix K conditions were analyzed.

(2) Small Break (Case: *0.07 ft^2, CLTP / Rated Flow, Top-Peak, 6 Automatic Depressurization System (ADS)* in Table 4 of Reference 1). Both nominal and Appendix K conditions were analyzed. In addition, [[

]]

The NMP2 design has three DGs: Division I (Low Pressure Core Spray (LPCS) DG), Division II (Low Pressure Coolant Injection (LPCI) DG), and Division III (HPCS DG). In this supplemental LOCA evaluation, failure of the LPCS DG or the LPCI DG is also considered in addition to the unavailability of the HPCS DG. Based on the plant ECCS network, the following failures are assumed in this evaluation:

(1) Failure 1: Concurrent failure of both the HPCS DG and LPCI DG, which leaves only the LPCS DG available. For this failure, one (1) LPCI system and one (1) LPCS system are

available for the ECCS LOCA analysis. Six ADS valves are used in the analysis, which is the same as those used in the Reference 1 analysis.

(2) Failure 2: Concurrent failure of both the HPCS DG and LPCS DG, which leaves only the LPCI DG available. For this failure, two (2) LPCI systems are available for the ECCS LOCA analysis. Six ADS valves are used in the analysis, which is the same as those used in the Reference 1 analysis.

4.0 Analysis Results and Conclusion

The PCT results for the cases defined in Section 3.0 above are summarized in Table 1. The sensitivity results shown in Table 1 demonstrate that:

(1) The small break remains the limiting break.

(2) The limiting failure is the concurrent failure of both the HPCS DG and the LPCS DG.

(3) Based on the nominal results presented in Table 1, the NMP2 design has significant built-in margin (more than [[ ]]) to the 10 CFR 50.46 acceptance criteria even after considering multiple concurrent failures in the ECCS network.

(4) The Appendix K results presented in Table 1 confirm that there is still significant margin (more than [[ ]]) available to the 10 CFR 50.46 acceptance criteria, even after considering the licensing basis Appendix K requirements. The Appendix K PCT is less than [[ ]] for the most limiting small break. [[ ]] and the licensing basis PCT (1,690°F). Considering the significant Appendix K PCT margin to 2,200°F, the corresponding licensing basis PCT for the current limiting break will still be less than the 10 CFR 50.46 PCT limit of 2,200°F.

   a. Table 1 results show that the small recirculation suction line break is still the most limiting scenario. Therefore, a limited scope break spectrum was performed for small recirculation lines to identify the most limiting small break size.

(5) The Maximum Local Oxidation (MLO) is less than the 10 CFR 50.46 limit of 17%.

   a. MLO is less than 1% for nominal results.

   b. MLO is less than 4% for Appendix K results.

(6) The core wide oxidation is less than 0.1% for both nominal and Appendix K results, which is less than the 10 CFR 50.46 limit of 1%.

(7) The results confirm that there is no change to the compliance of the coolable geometry requirement documented in Reference 1.

(8) The NMP2 compliance with the core long-term cooling requirement remains satisfied. This is satisfied for the worst case scenario (with no spray available), which has enough injection capacity (with two LPCI pumps) to flood the core bypass region. For this scenario, the calculated spill over from the bypass region is more than the Boiling Water Reactor Owners' Group (BWROG) requirement of minimum 1.5 gpm of liquid flow to

every bundle (Reference 2). Furthermore, analysis performed in the supplemental LOCA evaluation showed that the subsequent core heatup for the long-term evaluation has a PCT significantly less than the 10 CFR 50.46 limit of 2,200°F, satisfying the long-term core cooling requirement.

(9) Results presented in this supplemental analysis are for GNF2 fuel only. However, these results also bound the LOCA response for the co-resident fuel type, GE14, because

a. The GNF2 Linear Heat Generation Rate (LHGR) is 1 KW/ft higher than that of GE14.

b. The GE14 ECCS LOCA analysis results in Reference 3 are lower than those of GNF2 fuel.

5.0 References

1. GE Hitachi Nuclear Energy, "Nine Mile Point Unit 2 GNF2 ECCS-LOCA Evaluation," 002N4205-R0, December 2015.
2. OG00-0382-01, "GE Position Summary Regarding Long-Term Post-LOCA Adequate Core Cooling Requirements," November 16, 2000.
3. GE Hitachi Nuclear Energy, "Safety Analysis Report for Nine Mile Point Unit 2 Maximum Extended Load Line Limit Analysis Plus," NEDC-33576P, Revision 0, October 2013.

Table 1 PCT Summary (°F)

[[												]]

Notes:

1. [[ ]]
2. [[ ]]

ATTACHMENT 5

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NFP-69
NRC Docket No. 50-410

Revised Markup of Proposed Technical Specifications Pages

(These markups replace the TS markups is Reference 1 in their entirety)

TS LCO Pages
3.5.1-1

TS SR Pages:
3.3.5.1-8
3.5.1-4
3.5.3-2
3.8.1-6
3.8.1-7
3.8.1-14
3.8.1-16
3.8.3-3

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

3.5.1 ECCS – Operating

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

APPLICABILITY: MODE 1,
MODES 2 and 3, except ADS valves are not required to be OPERABLE with reactor steam dome pressure ≤ 150 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days
B. High Pressure Core Spray (HPCS) System inoperable.	B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE. AND B.2 Restore HPCS System to OPERABLE status.	Immediately 14 days *

(continued)

* A one-time change to this Completion Time from 14 days to 35 days due to the HPCS DG replacement has been approved via Emergency LAR. This Completion Time expires on 12/31/2018 at 0100.

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

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

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program *
SR 3.3.5.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program *
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program *

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program *
SR 3.5.1.2	----------NOTE---------- Not required to be met for system vent paths opened under administrative control. ----------	
	Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify: a. For each ADS nitrogen receiver discharge header, the pressure is $\geq$ 160 psig; and b. For each ADS nitrogen receiver tank, the pressure is $\geq$ 334 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.3.1	Verify the RCIC System locations susceptible to gas accumulations are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program *
SR 3.5.3.2	----------NOTE ---------- Not required to be met for system vent flow paths opened under administrative control. ----------	
	Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3	---------- NOTE ---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with reactor pressure ≤ 1035 psig and ≥ 935 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	---------- NOTE ---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program

(continued)

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.2	---------- NOTE ---------- All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. ---------- Verify each required DG starts from standby conditions and achieves: a. In ≤ 10 seconds, voltage ≥ 3950 V for Division 1 and 2 DGs and ≥ 3820 V for Division 3 DG, and frequency ≥ 58.8 Hz for Division 1 and 2 DGs and ≥ 58.0 Hz for Division 3 DG; and b. Steady state voltage ≥ 3950 V and ≤ 4370 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program *

(continued)

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	---------- NOTES ---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2. ---------- Verify each required DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 3960 kW and ≤ 4400 kW for Division 1 and 2 DGs, and ≥ 2340 kW and ≤ 2600 kW for Division 3 DG.	In accordance with the Surveillance Frequency Control Program *
SR 3.8.1.4	Verify each required day tank contains ≥ 403 gal of fuel oil for Division 1 and 2 DGs and ≥ 282 gal for Division 3 DG.	In accordance with the Surveillance Frequency Control Program *
SR 3.8.1.5	Check for and remove accumulated water from each required day tank.	In accordance with the Surveillance Frequency Control Program *
SR 3.8.1.6	Verify each required fuel oil transfer subsystem operates to automatically transfer fuel oil from the storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program *

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	---------- NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 3960 kW for Division 1 and 2 DGs, and ≥ 2340 kW for Division 3 DG. Momentary transients below the load limit do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each required DG starts and achieves: a. In ≤ 10 seconds, voltage ≥ 3950 V for Division 1 and 2 DGs and ≥ 3820 V for Division 3 DG, and frequency ≥ 58.8 Hz for Division 1 and 2 DGs and ≥ 58.0 Hz for Division 3 DG; and b. Steady state voltage ≥ 3950 V and ≤ 4370 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program *

(continued)

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	---------- NOTE ---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify interval between each sequenced load block, for the Division 1 and 2 DGs only, is ≥ 90% of the design interval for each automatic load sequence time delay relay.	In accordance with the Surveillance Frequency Control Program *

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains: a. ≥ 50,000 gal of fuel for Division 1 DG and Division 2 DG; and b. ≥ 35,342 gal of fuel for Division 3 DG.	In accordance with the Surveillance Frequency Control Program *
SR 3.8.3.2	Verify lube oil inventory is: a. ≥ 99 gal for Division 1 DG and Division 2 DG; and b. ≥ 168 gal for Division 3 DG.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program *
SR 3.8.3.4	Verify each DG air start receiver pressure is: a. ≥ 225 psig for Division 1 DG and Division 2 DG; and b. ≥ 190 psig for Division 3 DG.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program *

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

ATTACHMENT 6

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NFP-69
NRC Docket No. 50-410

Revised Technical Specification Clean Pages

TS LCO Pages
3.5.1-1

TS SR Pages:
3.3.5.1-8
3.5.1-4
3.5.3-2
3.8.1-6
3.8.1-7
3.8.1-14
3.8.1-16
3.8.3-3

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

3.5.1 ECCS – Operating

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

APPLICABILITY: MODE 1,
MODES 2 and 3, except ADS valves are not required to be OPERABLE with reactor steam dome pressure ≤ 150 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days
B. High Pressure Core Spray (HPCS) System inoperable.	B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE. AND B.2 Restore HPCS System to OPERABLE status.	Immediately 14 days*

(continued)

*A one-time change to this Completion Time from 14 days to 35 days due to the HPCS DG replacement has been approved via Emergency LAR. This Completion Time expires on 12/31/2018 at 0100.

SURVEILLANCE REQUIREMENTS

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1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

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

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program*
SR 3.3.5.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program*
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program*

*Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program*
SR 3.5.1.2	----------NOTE---------- Not required to be met for system vent paths opened under administrative control. ---------- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify: a. For each ADS nitrogen receiver discharge header, the pressure is $\geq$ 160 psig; and b. For each ADS nitrogen receiver tank, the pressure is $\geq$ 334 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

* Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.3.1	Verify the RCIC System locations susceptible to gas accumulations are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program*
SR 3.5.3.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with reactor pressure ≤ 1035 psig and ≥ 935 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program

(continued)

*Following return to OPERABILTY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.2	----------NOTE---------- All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. ---------- Verify each required DG starts from standby conditions and achieves: a. In ≤ 10 seconds, voltage ≥ 3950 V for Division 1 and 2 DGs and ≥ 3820 V for Division 3 DG, and frequency ≥ 58.8 Hz for Division 1 and 2 DGs and ≥ 58.0 Hz for Division 3 DG; and b. Steady state voltage ≥ 3950 V and ≤ 4370 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program*

(continued)

*Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2. ---------- Verify each required DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 3960 kW and ≤ 4400 kW for Division 1 and 2 DGs, and ≥ 2340 kW and ≤ 2600 kW for Division 3 DG.	In accordance with the Surveillance Frequency Control Program*
SR 3.8.1.4	Verify each required day tank contains ≥ 403 gal of fuel oil for Division 1 and 2 DGs and ≥ 282 gal for Division 3 DG.	In accordance with the Surveillance Frequency Control Program*
SR 3.8.1.5	Check for and remove accumulated water from each required day tank.	In accordance with the Surveillance Frequency Control Program*
SR 3.8.1.6	Verify each required fuel oil transfer subsystem operates to automatically transfer fuel oil from the storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program*

(continued)

*Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 3960 kW for Division 1 and 2 DGs, and ≥ 2340 kW for Division 3 DG. Momentary transients below the load limit do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each required DG starts and achieves: a. In ≤ 10 seconds, voltage ≥ 3950 V for Division 1 and 2 DGs and ≥ 3820 V for Division 3 DG, and frequency ≥ 58.8 Hz for Division 1 and 2 DGs and ≥ 58.0 Hz for Division 3 DG; and b. Steady state voltage ≥ 3950 V and ≤ 4370 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program*

(continued)

*Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 18, 2019.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify interval between each sequenced load block, for the Division 1 and 2 DGs only, is ≥ 90% of the design interval for each automatic load sequence time delay relay.	In accordance with the Surveillance Frequency Control Program*

(continued)

*Following return to OPERABILITY of the HPCS System, the past due Surveillances will be completed by January 11, 2019.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains: a. ≥ 50,000 gal of fuel for Division 1 DG and Division 2 DG; and b. ≥ 35,342 gal of fuel for Division 3 DG.	In accordance with the Surveillance Frequency Control Program*
SR 3.8.3.2	Verify lube oil inventory is: a. ≥ 99 gal for Division 1 DG and Division 2 DG; and b. ≥ 168 gal for Division 3 DG.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program*
SR 3.8.3.4	Verify each DG air start receiver pressure is: a. ≥ 225 psig for Division 1 DG and Division 2 DG; and b. ≥ 190 psig for Division 3 DG.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program*

*Following return to OPERABILITY of HPCS System, the past due Surveillances will be completed by January 18, 2019.