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10 CFR 50.90
10 CFR 50.91(a)(5)

NMP2L2694

December 6, 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: Emergency License Amendment Request – One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances

Pursuant to 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (Exelon) is requesting approval for proposed changes to the Technical Specifications (TS), Appendix A of Renewed Facility Operating License No. NPF-69 for Nine Mile Point Nuclear Station, Unit 2 (NMP2). The proposed changes are being requested on an emergency basis pursuant to 10 CFR 50.91(a)(5).

The proposed change modifies the completion time for NMP2 TS 3.5.1, "ECCS-Operating," Required Action B.2, from 14 days to 35 days. Additionally, this change addresses surveillances that are due to be performed on protected equipment during the extended period, as described in Attachment 1. The proposed change requests these surveillances be suspended until after restoration of the High Pressure Core Spray (HPCS) Diesel Generator (DG).

On November 26, 2018, at 0100, NMP Unit 2 declared the High Pressure Core Spray (HPCS) system inoperable and entered a 14 day Limiting Condition for Operation, under TS 3.5.1, to perform eighteen-year preventive maintenance of the HPCS Diesel Generator (DG) which included power pack inspections, cleaning lube oil coolers, and additional eighteen-year maintenance. At 0518 on December 2, 2018, during post maintenance testing of the HPCS DG, the Main Control Room was notified by an Operator to shut down the HPCS DG. There was sparking (from metal to metal contact) and smoke visible along with other noted damage to the HPCS DG. The DG was safely shutdown from the Main Control Room. The initial inspection of the HPCS DG found lower casing covers for cylinders 3 and 13 were off, a piston had come loose inside the diesel crankcase and that one piston connecting rod was broken and another piston connecting rod was bent. Additional signs of internal damage were also noted.

Upon further investigation it was determined that based on the extent of the damage to the HPCS DG, it requires replacement, which is expected to take 21 days to complete, including post-maintenance testing. Adding 21 days to the initial expected HPCS System LCO expiration time results in a new expected LCO Completion Time ending no later than 0100 on December 31, 2018. Therefore, Exelon is requesting a 21-day extension to the HPCS System LCO, TS 3.5.1. Without approval of the extension, NMP2 would need to shutdown based on the current Completion Time ending at 0100 on December 10, 2018. Since this unexpected failure occurred following the completion of the preventive maintenance window and the unexpected emergent nature of the failure of the HPCS DG, Exelon did not have the ability to foresee and prevent the need for this request. Therefore, Exelon is requesting an emergency License Amendment Request (LAR).

At this time, the preliminary cause of the failure was due to a hydro-lock, i.e., inability of the pistons to move, resulting in damage to the number 3 and 13 cylinders. Further review identified damage to the engine block, crank shaft and power packs to the cylinders. The activity to replace the diesel engine and perform a range of post-maintenance and acceptance testing results in the estimated December 31, 2018, return to service date.

To support the one-time extension of the Completion Time, the existing LOCA analysis of record methodology was used to demonstrate that the ECCS acceptance criteria are met in the current plant configuration. Additionally, in support of the one-time extension, the normal offsite power for HPCS is operable and will be protected throughout the time of the extension.

Exelon has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92, "Issuance of amendments."

The proposed changes have been reviewed and approved by the NMP Plant Operations Review Committee in accordance with the requirements of the Exelon Quality Assurance Program.

Attachment 1 provides the evaluation of the proposed changes and justification for the need for the emergency LAR per 10 CFR 50.91(a)(5). Attachment 2 provides a copy of the marked up TS pages that reflect the proposed changes. Attachment 3 provides a copy of the TS clean pages.

Exelon requests approval of this emergency LAR by 1800 on December 9, 2018, to support the diesel engine replacement and restoration of the HPCS DG to Operable status.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Exelon is notifying the State of New York of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

If you have any questions or require additional information, please contact Ron Reynolds at (610) 765-5247.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 6th day of December 2018.

Respectfully,

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

Attachments:
1. Evaluation of Proposed Changes
2. Markup of Proposed Technical Specifications Pages
3. Clean Pages of Proposed Technical Specifications Pages

cc:	Regional Administrator - NRC Region I	w/ attachments
	NRC Senior Resident Inspector - NMP	"
	NRC Project Manager, NRR - NMP	"
	A. L. Peterson, NYSERDA	"

ATTACHMENT 1

Emergency License Amendment Request

Nine Mile Point Nuclear Station, Unit 2
Docket Nos. 50-410

EVALUATION OF PROPOSED CHANGES

Subject: One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

3.0 TECHNICAL EVALUATION

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4.1 Applicable Regulatory Requirements/Criteria

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4.3 No Significant Hazards Consideration

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6.0 REFERENCES

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (Exelon) is requesting approval for proposed changes to the Technical Specifications (TS), Appendix A of Renewed Facility Operating License Nos. NPF-69 for Nine Mile Point Nuclear Station, Unit 2 (NMP2). The proposed changes are being requested on an emergency basis pursuant to 10 CFR 50.91(a)(5). The reason that this License Amendment Request (LAR) is being submitted on an emergency basis and the justification why this situation could not be avoided is further discussed in Section 2 below.

The proposed change modifies the completion time for NMP2 TS 3.5.1, "ECCS-Operating," Required Action B.2 from 14 days to 35 days. Additionally, this change addresses surveillances that are due to be performed on equipment that will be protected during the extended period. The proposed change requests these surveillances be suspended until after restoration of the High Pressure Core Spray (HPCS) Diesel Generator (DG) and restoration of the HPCS system to Operable.

Exelon requests approval of this emergency LAR by 1800 on December 9, 2018, to support the current Completion Time that is scheduled to end at 0100 on December 10, 2018.

2.0 DETAILED DESCRIPTION

NMP2's AC distribution system consists of three divisional load groups, Divisions 1, 2, and 3, with each division powered by an independent Class 1E 4.16 kV bus. In the event of a loss of the normal onsite source of power, Division 1 and 2, the 4.16 kV buses each have one separate and independent source of offsite power. The Division 3 4.16 kV (HPCS) bus can be supplied by either source of offsite power. In the event of a Loss of Offsite Power (LOOP), each of the three buses are energized from their own independent diesel generator. (Division 1, Division 2, and the HPCS DG (a.k.a. the Division 3) generators respectively).

During a LOOP, Division 1 and Division 2 are independent redundant divisions and supply all nuclear safety-related loads except the high-pressure core spray (HPCS) system. The HPCS system and related equipment are supplied by the dedicated HPCS Diesel Generator (DG).

The HPCS system provides and maintains an adequate coolant inventory inside the Reactor Pressure Vessel (RPV) to limit fuel cladding temperatures in the event of a break in the Reactor Coolant Pressure boundary (RCPB). The system is initiated by either high pressure in the drywell or low water level in the vessel. It operates independently of all other systems over the entire range of pressure differences from greater than normal operating pressure to zero.

In the event of a HPCS failure, the Automatic Depressurization System (ADS), which consists of 7 Safety Relief Valves, is designed to depressurize the primary system to allow low-pressure Emergency Core Cooling System (ECCS) to inject. These low-pressure systems are the Low-Pressure Coolant Injection (LPCI) System and the Low-

Pressure Core Spray (LPCS) System. Therefore, without HPCS and in the event of a break in the RCPB, ADS operation reduces the RPV pressure to within the operating pressure range of the low-pressure ECCS systems, the low-pressure systems inject water into the core and adequate core cooling is maintained. It is important to note that each ADS valve can be actuated by either an A or B trip solenoid and trip system with corresponding instrumentation which are powered by the Division 1 and 2 class 1E electrical buses, respectively. Loss of Division 1 or Division 2 buses will not result in the failure of the ADS safety function.

NMP2 EDG Design Differences:

The HPCS DG is an Electromotive Division (EMD) engine. The Division 1 and 2 EDGs are Cooper-Bessemer engines. There are several design differences between the two diesels.

Parameters	HPCS DG	Division 1 & 2
Manufacturer	Electromotive Division (EMD)	Cooper-Bessemer
Cycle	2 cycle	4 cycle
Number of Cylinders	20	16
Engine Speed	900 rpm	600 rpm
Design Function	High Pressure Core Spray only	Emergency AC Power

The differences in the design between EMD and Cooper-Bessemer are extensive. This discussion will be limited to the most-probable potential failure modes for the subject event. The most probable failure mode is related to the fuel injector on Cylinder 3. These fuel injectors are of a different design than those installed on the Cooper-Bessemer engine. Failure of the fuel injector could have led to a hydro lock condition which initiated the event. Post failure analysis has not been completed yet on the fuel injector to confirm the cause of this potential failure mode. Other failure modes include a jacket water leak that could lead to a hydro lock condition. The design of the Cooper-Bessemer engine is not likely to hydro-lock the piston due to jacket water leakage. A jacket water leak on the Cooper-Bessemer engine is less likely due to two additional o-rings in the design. The power pack assembly on the EMD is a different design than the Cooper-Bessemer. Extensive disassembly on the EMD is performed during maintenance activities while the Cooper-Bessemer does not undergo similar disassembly due to cylinder design.

Maintenance Strategy Differences:

The work practices and preventive maintenance strategy for Cooper-Bessemer engines are significantly different when compared to EMD engines based on the different engine designs discussed above.

There is more engine work being performed on the EMD engine as compared to Cooper-Bessemer engines. The EMD engine has a preventive maintenance task to refurbish the cylinder power packs. This includes o-ring and cylinder to head gasket replacements.

On the Cooper-Bessemer engines, cylinder bore inspections are performed with a borescope. The EMD engine also has a fuel injector replacement. Cooper-Bessemer engines only have an inspection for fuel injectors. Each engine has a maintenance procedure specific to the engine.

Description of Events

On November 26, 2018, at 0100, NMP Unit 2 declared the High-Pressure Core Spray (HPCS) system inoperable and entered a 14 day Limiting Condition for Operation, under TS 3.5.1, to perform eighteen-year preventive maintenance of the HPCS Diesel Generator (DG) which included power pack inspections, cleaning lube oil coolers, fuel injector replacement, and additional eighteen-year maintenance. A note in TS LCO 3.8.1 allows taking exception to the Applicability requirements for HPCS Division 3 power sources, provided the HPCS System is declared inoperable (Reference TS LCO 3.8.1 Bases).

At 0518 on December 2, 2018, during post maintenance testing of the HPCS DG, the Main Control Room was notified by an Operator to shut down the HPCS DG. There was sparking (from metal to metal contact) and smoke visible along with other noted damage to the HPCS DG. The DG was safely shutdown from the Main Control Room. The initial inspection of the HPCS DG found lower casing covers for cylinders 3 and 13 were off, a piston had come loose inside the diesel crankcase and that one piston connecting rod was broken and another piston connecting rod was bent. Additional signs of internal damage were also noted.

Upon further investigation it was determined that based on the extent of the damage to the HPCS DG, it requires replacement, which is expected to take 21 days to complete, including post-maintenance testing. The new diesel engine is the same model as the current diesel engine.

Reason the Amendment is Requested on an Emergency Basis

Without approval of the LCO extension, NMP2 would be required to shutdown. The HPCS DG was being tested following completion of the eighteen-year maintenance cycle when the unexpected failure occurred, resulting in the need for this emergency LAR. Damage to the diesel engine was unexpected and was not within the ability of Exelon to foresee and prevent. All maintenance work performed was in accordance with approved procedures and work orders, with the Original Equipment Manufacturer (OEM) vendor oversight and support. Two unloaded maintenance runs had been successfully completed prior to the failure. Initial HPCS DG start parameters were normal. The damage occurred approximately 50 minutes into the loaded maintenance run.

Reason Emergency Situation Has Occurred

At this time, the preliminary cause of the failure was due to a hydro-lock (i.e., inability of the pistons to move), resulting in damage to the number 3 and 13 cylinders. A Failure Modes Causal Tree (FMCT) was created to assist with identification of the reason for the hydro-lock. There are several failure modes that have not been refuted at this time. The most probable failure mode is related to the fuel injector on Cylinder 3. Failure of the fuel injector could have led to a hydro lock condition which initiated the event. Post failure

analysis has not been completed yet on the fuel injector to confirm the cause of this potential failure mode. Other failure modes include a jacket water leak that could lead to a hydro lock condition. This would cause the connecting rods to bend and result in engine failure. Further review identified damage to the crank shaft, engine block, and power packs to the cylinders. The damage is extensive enough to require replacement of the diesel engine. The activity to replace the diesel engine and perform acceptance testing results in the estimated December 31, 2018, return to service.

Reason the Situation Could Not Have Been Avoided

All maintenance work performed was in accordance with approved procedures and work orders, with the Original Equipment Manufacturer (OEM) vendor oversight and support. The work had been previously performed at Nine Mile Point Unit 1, on similar EMD diesel engines approximately 13 months earlier, with no issues during subsequent monthly surveillance tests. Therefore, the problem could not have been anticipated or avoided.

3.0 TECHNICAL EVALUATION

The NMP2 licensing basis LOCA analysis uses the NRC approved SAFER/PRIME-LOCA Licensing Methodology (Reference 1). A supplemental analysis was conducted, which applied the same methods, inputs and assumptions as the licensing basis LOCA analysis. Included, as an additional measure, is an additional single failure of either the Division 1 Emergency Diesel Generator (Division 1 LPCS-DG) or the Division 2 Emergency Diesel Generator (Division 2 LPCI-DG).

For this supplemental analysis, potentially limiting breaks were quantitatively evaluated. These are the limiting design basis LOCA scenarios. For non-limiting scenarios, a qualitative assessment is presented.

Limiting Design Basis LOCA Scenario:

The limiting LOCA scenario for NMP2 is the recirculation suction line small break with a LOOP and failure of the HPCS DG for both nominal and Appendix K conditions. The HPCS DG failure impacts both small and large break results; therefore, the supplemental analysis addresses both limiting small and limiting large break scenarios:

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

- Large Break (Case DEG, CLTP / MELLLA+ Flow, Mid-Peak in Reference 1 Table 3). Both nominal and Appendix K conditions are analyzed. CLTP stands for Current Licensed Thermal Power. MELLLA+ stands for Maximum Extended Load Line Limit Analysis Plus.

The NMP2 design has three DGs: Division 1, Division 2, and HPCS DG. In this supplemental LOCA evaluation, failure of Division 1 EDG or Division 2 EDG are also considered in addition to the unavailability of HPCS DG. Based on the plant ECCS

network, the following failures are assumed in this evaluation:

- Failure 1: Concurrent failure of both HPCS DG and Division 2 EDG, which leaves only Division 1 EDG available (LPCS-DG). For this failure, one (1) LPCI system and one (1) LPCS system are available for the ECCS LOCA analysis.

- Failure 2: Concurrent failure of both HPCS DG and Division 1 EDG, which leaves only the Division 2 EDG available (LPCI-DG). For this failure, two (2) LPCI systems are available for the ECCS LOCA analysis.

Analysis Results:

1) The Peak Cladding Temperature (PCT) is less than 2200^0F:

    a. Based on the SAFER/PRIME Nominal results, the NMP2 design has a significant built-in margin to the 10 CFR 50.46 acceptance criteria even after considering multiple concurrent failures in the ECCS.

    b. The SAFER/PRIME Appendix K results confirm that there is still significant margin available to the 10 CFR 50.46 acceptance criteria of 2200^oF, even after considering the licensing basis Appendix K requirements along with multiple concurrent failures in the ECCS.

2) The Maximum Local Oxidation (MLO) is less 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.

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

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

5) 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 2 LPCI pumps) to flood the core bypass region. For this scenario the calculated spill over from the bypass region is more than the BWROG requirement of minimum 1.5 gpm of liquid flow to every bundle. Furthermore, analysis performed in the supplemental LOCA evaluation showed that the subsequent core heatup for the long term evaluation has peak cladding temperature significantly less than the 10 CFR 50.46 limit of 2200^0F, satisfying the long term core cooling requirement.

Non-limiting LOCA Scenario:

NMP2 non-recirculation line breaks were previously evaluated and shown to be non-limiting. Therefore, this section provides a qualitative evaluation for these non-recirculation line breaks:

- HPCS injection line
- Feedwater line (inside & outside containment)
- Steam line (inside & outside containment)

For all non-recirculation line breaks, the break location is above the Top-of-Active Fuel (TAF) elevation. Therefore, the reflood rate is always higher than for the limiting recirculation line breaks. Considering the impact of HPCS DG failure (along with an additional DG failure), i.e. reduced ECCS flow rate resulting in reduced reflood rate, the LOCA response will be less severe for non-recirculation line breaks. Since the supplemental LOCA evaluation performed for the limiting recirculation line breaks demonstrated that the LOCA response for HPCS DG failure is acceptable, that outcome is also applicable to all other non-recirculation line breaks.

Previously, concurrent failures of the HPCS DG with an additional single failure (Division 1 or Division 2 DG failure) were evaluated and the recirculation line breaks were shown to bound all other breaks, including LPCS and LPCI line breaks.

Other Transients:

Many Chapter 15, Accident Analyses, rely upon either Reactor Core Isolation Cooling (RCIC) or HPCS injection to maintain water level, typically late in the event after the limiting condition has occurred. These include:

- Loss of instrument air
- Feedwater controller failure – maximum demand
- Pressure regulator failure – open
- Generator load rejection
- Turbine trip
- Loss of feedwater flow
- Trip one recirculation pump
- Trip both recirculation pumps
- Fast closure of one main recirculation valve
- Fast closure of both recirculation valves
- Recirculation pump seizure

For these scenarios, RCIC and HPCS are powered via normal, or offsite, power, and these events are unaffected by loss of the HPCS DG.

Failure of Residual Heat Removal (RHR) shutdown cooling may use shutdown cooling including RCIC and/or HPCS. The existing Updated Safety Analysis Report (USAR) evaluation shows that availability, or failure, of the HPCS DG equipment does not affect

the normal shutdown mode because normal shutdown cooling is available through equipment powered from only Divisions 1 and 2. Loss of either Division 1 or Division 2 is explicitly addressed by the existing USAR analysis, and it shows that the safety function can be accomplished by either.

Increase in reactor coolant inventory, inadvertent manual HPCS startup, assumes the HPCS to be normally powered, and this event is unaffected by loss of the HPCS DG.

The loss of AC power scenarios, utilize HPCS and RCIC for water level control at some time beyond the primary concerns for fuel thermal margin and overpressure effects. As shown in the RHR shutdown cooling event, adequate level control can be accomplished through equipment powered from either Division 1 or Division 2.

For the Anticipated Transient Without SCRAM (ATWS) event the HPCS pump is placed in pull to lock to prevent injection inside the core shroud and therefore the HPCS assumed failure does not impact the ATWS mitigation analysis.

Impact on Primary Containment Pressure:

The primary containment peak pressure is defined by the recirculation suction line break and is dominated by the mass energy release defined as the short term 1st peak pressure and this peak is not impacted by the ECCS flow reduction. NMP2 is also among the Mark II plants with a relatively large drywell to wetwell volume ratio that increases the second peak which is related to increased transfer of noncondensable gas from drywell to wetwell. The peak pressure for NMP2 is defined by the second peak, with a peak pressure approximately 0.6 psi above the first peak. This second peak is a function of the blowdown period. The peak pressure sensitivity to ECCS lineups and flows has been evaluated and determined to result in variation of less than 1 psi depending on the assumed initiation time and ECCS single failure assumptions. The assumed minimum ECCS with only 2 LPCI systems remains within the bounds of this analysis such that no significant increase in the second peak is predicted. The margin to the containment design limit remains bounded by the case reflective of the USAR lower bound conditions of drywell temperature and relative humidity high initial suppression pool temperature (90 degrees) which defines the calculated peak drywell pressure of 42.08 psig compared to the containment design limit of 45 psig.

Impact on Primary Containment Temperature:

The primary containment peak temperature is defined by the small steamline break. This event is analyzed assuming reactor level is maintained with feedwater and the Control Rod Drive System only. The analysis assumes HPCS /RCIC / LPCS and LPCI are disabled. Therefore, the reduced ECCS from HPCI with only 2 LPCI does not impact the analysis peak drywell temperatures.

Impact on Primary Containment EQ Profiles:

The Equipment Qualification (EQ) pressure and temperature profiles are defined conservatively and bound the accident peak pressure and temperature such that the assumed reduced ECCS flows do not impact the EQ profiles.

Impact on ECCS Pump NPSH:

The NMP2 ECCS pump available Net Positive Suction Head (NPSH) is defined based on a conservatively assumed suppression pool temperature of 212°F with zero overpressure with actual max calculated temperature for the design basis LOCA of less than 210°F. The reduced ECCS flows reduce the pump heat assumed added to the suppression pool and therefore the actual peak suppression pool temperature is reduced which increases the available NPSH.

Compensatory Actions in place during repair of the HPCS DG:

1. The redundant Division 1 and Division 2 ECCS and EDGs (along with all required systems, subsystems, trains, components, and devices) have been verified OPERABLE (as required by TS) and no discretionary maintenance activities have been scheduled.
2. No discretionary maintenance activities are scheduled on the main and reserve station transformers.
3. No discretionary maintenance activities are scheduled in the Scriba switchyard or the unit's 115 kV power supply lines and transformers which could cause a line outage or challenge off site power availability to the unit utilizing the extended DG completion time.
4. All activity in the Scriba switchyard is closely monitored and controlled in accordance with OP-NM-108-107-1002 Off-site Power Operations and Interface.
5. All maintenance activities associated with Unit 2 are being assessed and managed per 10 CFR 50.65(a)(4) (Maintenance Rule).
6. The OPERABILITY of the RCIC system has been verified.
7. With the HPCS system and Division 3 Diesel Generator INOPERABLE the following fire mitigating actions for the following areas have been put in place in accordance with Plant Operations procedures:

   204SW Reactor Bldg. RCIC Room, El 175'-0"

   212SW Reactor Bldg. N General Area El 175' & 196'

   213SW Reactor Bldg. S. General Area El 175' & 196'

   231SW Aux Bay North, Motor Control Center El 240'

   245SW Reactor Bldg. South, General Area El 261'

   252SW Reactor Bldg. North, General Area El 289'

   306NZ Division 1 Cable Area, El 214'

   312NW Division 2 Cable Area, El 214

   321NW Division 1 Riser Area, El 237

   332NW Division 1 Cable Chase El 261'

335NZ Division 2 Battery Room, Control Building El 261' and Division 2 HVAC Rm El 274'

336NL Division 2 Battery Room, Control Building El 261' and Division 2 HVAC Rm El 274'

342NL HPCS Switchgear Room, Control Bldg. El 261'

352NW Division 1 Cable Chase, El 288'

362NZ Pipe Tunnel 239'

371NW Division 1 Cable Chase, El 306'

403SW Division 2 Diesel Generator Room, El 261'

807NZ Service Water Pump Room B, El 224' and 274'

Mitigating actions during HPCS system and HPCS DG INOPERABLE window include:

- Minimize transient combustibles and hot work in the fire areas
- Confirm suppression system available or the requirements of the USAR are met for unavailable suppression system(s) per OP-NM-201-105.
- Confirm detection system available or the requirements of the USAR are met for unavailable detection system per OP-NM-201-105
- Confirm fire barriers intact or the requirements of the USAR are met for a fire barrier(s) not being intact per OP-NM-201-105.
- Inspect for general area cleanliness and ignition sources (not including installed plant equipment).
- Verify safety and fire-fighting equipment staged and accessible.
- Verify fire doors with automatic hold-open and release mechanisms are free of obstructions.
- Verify no safety concerns; i.e., unsecured gas bottles, smoke or odors, fire hazards including control of transient combustible material, hazardous debris.

8. The following equipment is protected by signage/chains for the duration of the extended completion time to prevent inadvertent impact from walkdowns, inspections maintenance and potential for transient combustible fires:

<u>Division 1</u>

- Division 1 Emergency Diesel Generator
- Division 1 Electrical Switchgear
- Division 1 Service Water System
- Division 1 ADS
- Line 5

- RHR A
- LPCS
- RCIC

Division 2

- Division 2 Emergency Diesel Generator
- Division 2 Electrical Switchgear
- Division 2 Service Water System
- Division 2 ADS
- Line 6
- RHR B
- RHR C

Division 3

- Division 3 Electrical Switchgear
- HPCS

9. TS required systems, subsystems, trains, components, and devices that depend on the remaining power sources will be verified to be operable and measures will be provided in accordance with OP-AA-108-117, Protected Equipment Program, to preclude discretionary testing or maintenance activities on these systems, subsystems, trains, components, and devices.

Summary of SRs being extended.

During the extended period of the TS 3.5.1, Required Action B.2, there are five (5) surveillance test procedures that would be required to be performed on protected equipment per the current frequency. Exelon is requesting that these surveillances be suspended during the extended period. Attachment 2 contains a markup of the TS SR Pages, annotated with a note stating when the past due Surveillances will be completed.

A review of the test procedures was conducted, looking back at 2 years of data.

Several tests will use the provisions of TS SR 3.0.2 for applying 25% grace to schedule testing outside of the extended duration, when needed. A number of these surveillance tests do not affect the operability of the equipment during the performance of the testing. Other scheduled surveillance tests will require declaring the tested Structure, System, and Component (SSC) inoperable during performance of the tests. All of the surveillance tests required to be completed during this extended duration have applied the 25% grace period allowed by SR 3.0.2.

For the following surveillance tests coming due that require testing or declaring protected SSCs inoperable, Exelon requests a suspension beyond their required surveillance interval:

- N2-OSP-ICS-M001 - RCIC Gas Accumulation Monitoring and Valve Lineup Verification (Monthly)
- N2-OSP-CSL-M001 – LPCS Gas Accumulation Monitoring and Valve Lineup Verification (Monthly)
- N2-ESP-ENS-Q731 - Quarterly Channel Functional Test of LPCS / LPCI Pumps A, B and C (Normal and Emergency Power) Auto Start Time Delay Relays, Attachment 2 (Division 2 Test) (Quarterly)
- N2-OSP-EGS-M@001 - Diesel Generator and Diesel Air Start Valve Operability Test – Division I and II (Monthly)
- CY-NM-210-500 – Diesel Fuel Monthly Particulate Surveillance for Division I EDG (Monthly)

A 24-month review of these surveillances was performed with no adverse performance identified. A summary of each procedure is below:

N2-OSP-ICS-M001 - All valves were in required position and all gas void inspections were completed without identification of any impactful gas accumulation.

N2-OSP-CSL-M001 - All valves were in required position and all gas void inspections were completed without identification of any impactful gas accumulation.

N2-ESP-ENS-Q731 - All acceptance criteria have been met for the testing and all LSFT steps were completed satisfactory.

N2-OSP-EGS-M@001 - These tests were reviewed for both Division 1 and 2, overall testing did not reveal any adverse conditions that would prevent the diesel generator from performing its required safety functions.

CY-NM-210-500 – Review of past sample results do not reveal any adverse trends that would impact operability.

Following restoration of the HPCS DG and HPCS system to OPERABLE, the following past due surveillances requirements of N2-OSP-CSL-M001, N2-OSP-ICS-M001 and N2-ESP-ENS-Q731 (Division 2) will be completed by January 11, 2019:

- 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 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
- SR 3.5.1.1 – LPCS Gas Accumulation Monitoring
- SR 3.5.1.2 – LPCS Lineup Verification

- SR 3.5.3.1 – RCIC Gas Accumulation Monitoring
- SR 3.5.3.2 – RCIC Lineup Verification

Completion of the following surveillance requirements of N2-OSP-EGS-M@001 for Division 1 and 2 will be completed by January 18, 2019:

- 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 3.8.1.6 – Fuel Oil Transfer System
- SR 3.8.1.13 – Diesel Voltage and Frequency (Hot Restart)
- SR 3.8.3.1 – Fuel Oil Storage Tank
- SR 3.8.3.2 – Lube Oil Inventory
- SR 3.8.3.3 – Diesel Fuel Oil Properties
- SR 3.8.3.4 – Diesel Starting Air Receiver Pressure
- SR 3.8.3.5 – Fuel Oil Storage Tank Water Accumulation

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The following regulatory requirements have been considered:

10 CFR 50.36:

10 CFR, Section 50.36, "Technical specifications," in which the Commission established its regulatory requirements related to the contents of the TS. Specifically, 10 CFR 50.36(c)(2) states, in part, "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." The proposed changes to HPCS does not affect compliance with these regulations.

10 CFR 50.46:

10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors" in which the Commission established its regulatory requirements related to core cooling: The proposed changes, as summarized in Section 3.0, maintain the acceptance criteria of this section.

10 CFR 50 Appendix A:

The applicable 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," was considered as follows:

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.

Criterion 36—Inspection of emergency core cooling system. The emergency core cooling system shall be designed to permit appropriate periodic inspection of important components, such as spray rings in the reactor pressure vessel, water injection nozzles, and piping, to assure the integrity and capability of the system.

Criterion 37—Testing of emergency core cooling system. The emergency core cooling system shall be designed to permit appropriate periodic pressure and functional testing to assure (1) the structural and leak tight integrity of its components, (2) the operability and performance of the active components of the system, and (3) the operability of the system as a whole and, under conditions as close to design as practical, the performance of the full operational sequence that brings the system into operation, including operation of applicable portions of the protection system, the transfer between normal and emergency power sources, and the operation of the associated cooling water system.

4.2 Precedent

None.

4.3 No Significant Hazards Consideration

Exelon Generation Company, LLC (Exelon) requests a one-time change to the Completion Time for TS 3.5.1, Required Action B.2. The proposed change increases the Completion Time from 14 days to 35 days to allow for replacement of the HPCS diesel engine. Additionally, this change addresses surveillances that are due to be performed on protected equipment during the extended period, and will be extended.

Exelon has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed changes involve a one-time extension to the Completion Time for

Technical Specification 3.5.1, Required Action.B.2, to allow necessary time to replace the diesel engine for the High Pressure Core Spray (HPCS) Diesel Generator (DG). The HPCS DG is dedicated to the operation of the HPCS Pump and is not an initiator of any accident previously evaluated. Additionally, this change addresses surveillances that are due to be performed on protected equipment during the extended period. These surveillances will be suspended until after the HPCS DG is restored to OPERABLE status. These changes will not result in an increase in the probability of any accident previously evaluated. The radiological consequences of an accident previously evaluated during the period that the diesel engine is being replaced to reestablish operability are no different from the radiological consequences of an accident previously evaluated while the HPCS DG is inoperable. As a result, the consequences of any accident previously evaluated are not increased.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of any 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.

   The proposed changes do not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis.

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

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

   Response: No.

   The proposed changes have no adverse effect on plant operation. The plant response to the design basis accidents does not change. The proposed changes do not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analyses. There is no change being made to safety analysis assumptions, safety limits or limiting safety system settings that would adversely affect plant safety as a result of the proposed changes. The design basis LOCA Evaluation results have concluded that a single Division 1 or a Division 2 Emergency DG associated Emergency Core Cooling System low pressure system remains capable of meeting the design basis core cooling safety function. Therefore, the proposed change to increase the LCO Completion Time does not involve a significant reduction in a margin of safety as defined in the basis for any Technical Specification.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

4.4 Conclusions

Based upon the above, Exelon concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. Nine Mile Point Unit 2 GNF2 ECCS-LOCA Evaluation, 002N4205-R0, Revision 0, December 2015.

ATTACHMENT 2

Emergency License Amendment Request

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

One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances

Markup of Proposed Technical Specifications 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)

* Revise Completion Time from 14 days to 35 days to support equipment repair.

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 service of the HPCS DG, 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

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

(continued)

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 service of the HPCS DG, 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 service of the HPCS DG, 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 service of the HPCS DG, 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 service of the HPCS DG, 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 service of the HPCS DG, the past due Surveillances will be completed by January 18, 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 service of the HPCS DG, the past due Surveillances will be completed by January 18, 2019.

ATTACHMENT 3

Emergency License Amendment Request

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

One Time Extension to the High Pressure Core Spray Completion Time and Associated Surveillances

Clean Pages of Proposed Technical Specifications 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)

*Revise Completion Time from 14 days to 35 days to support equipment repair

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 service of HPCS DG, 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 service of the HPCS DG, 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 service of the HPCS DG, 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 service of HPCS DG, 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 service of HPCS DG, 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 service of HPCS DG, 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 service of HPCS DG, the past due Surveillances will be completed by January 18, 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 service of HPCS DG, the past due Surveillances will be completed by January 18, 2019.