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

Nine Mile Point Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-63
NRC Docket No. 50-220

Subject: Response to Request for Additional Information - "Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (Adoption of TSTF-425, Revision 3)"

References:

1. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (Adoption of TSTF-425, Revision 3)," dated May 12, 2015

2. Letter from Alexander N. Chereskin (Project Manager, U.S. Nuclear Regulatory Commission) to Bryan C. Hanson (Exelon) "Nine Mile Point Nuclear Station, Unit 1 - Request for Additional Information Regarding Adoption of Technical Specification Task Force Traveler 425 (CAC No. MF6061), dated November 9, 2015.

By letter dated May 12, 2015 (Reference 1), Exelon Generation Company, LLC (Exelon) requested to change the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS). The proposed amendment request would modify NMP1 TS by relocating specific surveillance frequencies to a licensee-controlled program with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies."

On October 26, 2015, a clarification call was held between the Nuclear Regulatory Commission (NRC) and Exelon personnel relative to Exelon's License Amendment Request (LAR) to adopt Technical Specification Task Force Traveler 425 (TSTF-425, Revision 3). (Reference 1)

On November 9, 2015 (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 the revised TS pages, as appropriate.

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 additional information provided in this response does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the additional information provided in this response 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 Enrique Villar at 610-765-5736.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 3rd day of December 2015.

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

Attachments: 1. Response to Request for Additional Information
2. Revised Technical Specifications Pages

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

By application dated May 12, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15134A232), Exelon Generation Company, LLC (the licensee) submitted a License Amendment Request (LAR) to revise the technical specifications (TS) for Nine Mile Point, Unit 1 (NMP-1). The LAR proposed to adopt the Technical Specification Task Force traveler (TSTF)-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – RITSTF [Risk-Informed TSTF] Initiative 5b," dated March 18, 2009 (ADAMS Accession No. ML090850642).

During the application review, the Nuclear Regulatory Commission (NRC) staff identified the following requests for additional information (RAIs):

Technical Specifications Branch (STSB) RAI-1

As part of this LAR submittal, several surveillance requirement (SR) frequency changes were proposed in Table 4.6.2a, "INSTRUMENTATION THAT INITIATES SCRAM," (page 201) of the NMP-1 TS. The proposed SR frequency revisions for parameters two through four have a superscript of (1). The NRC staff was unable to locate this note in the TS.

As discussed during the clarification call held on October 26, 2015, provide the supporting note for the proposed change, and modify the submittal as needed to correct the superscript.

Exelon Response to STSB RAI-1

As discussed during the clarification call on October 26, 2015, parameters two through four have a superscript of (1). The error was introduced when the TS pages were retyped to clean up several typographical errors for License Amendment 142, approved on July 14, 1993. The superscript (1) is supposed to be (l), the 12th letter of the alphabet, not a number.

Attachment 2 to this letter contains the revised page with the superscript corrected.

STSB RAI-2

As part of this LAR submittal, SR frequency changes were proposed for two channel calibrations in Item (9)(b)(i) from Table 4.6.2a of the NMP-1 TS. The NRC staff was unable to tell the difference between the two calibrations that are being performed on different intervals (i.e., per week and per month). When the calibration frequencies are moved to the Surveillance Frequency Control Program (SFCP), generic wording will replace these two frequencies, which will potentially remove the ability of a reader of the TS to discern that this item contains two discrete calibrations.

Since the SRs are both linked to item (9)(b)(i) from Table 4.6.2a, explain (1) how the SRs are different, (2) how this difference will be tracked in the SFCP, and (3) how it will be clear in the TS that this item pertains to two discrete calibrations. If necessary, modify the submittal as appropriate to address these concerns.

Exelon Response to STSB RAI-2

The instrument channel calibration in Item (9)(b)(i) from Table 4.6.2a has two distinct calibrations frequencies for the APRM upscale parameter. These frequencies are modified by two different superscripts (m) and (n), respectively. Note (m) is a gain check and adjustment. Note (n) is a calibration of the drawer. Since these are two distinct calibrations involving different components of the same parameter, two different SR frequencies were included in the TS, and they are marked up separately. However, the SFCP log will include two separate entries one for each distinct calibration frequency.

STSB RAI-3

On TS bases page 98 submitted by the licensee, the following is stated, "Reactor water samples are analyzed daily to ensure that reactor water quality remains within the BWR water chemistry guidelines." The NRC staff could not determine whether these reactor water samples were the same ones referenced in SR 4.2.3, "COOLANT CHEMISTRY." Explain the difference between the SR 4.2.3 frequency and this bases description. If necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-3

There is no difference between the reactor water samples referenced in SR 4.2.3, "COOLANT CHEMISTRY," and the Bases description. Therefore, the phrase "Reactor water samples are analyzed daily to ensure that reactor water quality remains within the BWR water chemistry guidelines" will be modified to read "Reactor water samples are analyzed in accordance with the Surveillance Frequency Control Program, and will ensure that reactor water quality remains within the BWR water chemistry guidelines."

Attachment 2 to this letter contains the revised bases description of SR 4.2.3.

STSB RAI-4

In Attachment-3, "Proposed Technical Specification and Bases Page Changes," of the LAR submittal, the licensee requests to incorporate control of the SR 4.2.7.d frequency (page 109) into the SFCP. The current verbiage of this SR indicates that its performance is event driven. Specifically, it is performed "At least once per plant cold shutdown;" therefore, the event driving the SR performance is a cold shutdown. The licensee states that this LAR submission is in accordance with TSTF-425, Revision 3, which explicitly excludes purely event driven SRs from being eligible for incorporation into the SFCP.

Based on the above discussion, provide a justification for deviating from the TSTF-425 requirements or, if necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-4

NMP-1 has custom Technical Specifications (TS) and utilizes language which is not consistent with the current Standard TS, but conveys the same intent. The intent of testing these valves is to perform the test in a Mode that is conducive to safely perform the test to ensure operability and at a frequency that is appropriate without imposing unnecessary wear and tear of the

components being tested. Testing these valves at cold shutdown if not performed within the last 92 days appears to have been chosen because of being the first Mode available to safely close these valves. The current Boiling Water Reactor 4 Standard Technical Specifications (BWR4/STS) has a number of similar surveillance (e.g., SR 3.6.1.3.9, SR 3.6.1.9.3) which test for the ability of similar components to close under actual or simulated signals closure at a refueling outage frequency (18 months or 24 months). These SRs are all relocated to the SFCP.

It is Exelon opinion that SR 4.7.2.d does not deviate from the TSTF-425 requirements and intent.

STSB RAI-5

On TS bases page 158 submitted by the licensee, it is indicated that the frequency for SR 4.3.6.b(4) [i.e., the leak rate test between the drywell and suppression chamber] is being transferred to the control of the SPCP, but, in contrast, TS page 154 of the LAR does not indicate that the frequency for this SR is being revised.

Provide a justification for this difference or if necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-5

SR 4.3.6.b(4) is being transferred to the control of the SPCP. Exelon inadvertently failed to revise SR 4.3.6.b in TS page 154.

Attachment 2 to this letter contains the revised SR 4.6.3.b.

STSB RAI-6

For TS tables 4.6.2a through 4.6.2l of the NMP-1 TS, there is a common note associated with this series of tables that appears several times. The note reads, "Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2[a-l], the primary sensor will be calibrated and tested once per operating cycle." The LAR proposes to delete this note as part of the TSTF-425 adoption. The note provides an SR for the primary sensor along with a frequency, which will potentially not be accounted for if the note is deleted.

Explain how the primary sensor SR will be accounted for in the proposed revision of the TS or if necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-6

The Note is being carried over to the newly created SFCP. However, because the Note references two distinct frequencies in one SR, the Note will be separated into two distinct entries to capture the two distinct frequencies.

STSB RAI-7

In Attachment-3 of the LAR submittal, the licensee proposed to incorporate control of the SR 4.6.5.3 frequency (page 266) into the SFCP. The current verbiage of this SR indicates that its performance is event driven. Specifically, it is performed "within 31 days prior to being subjected to core flux;" therefore, the event driving the SR performance is the start-up sources being subjected to core flux. The licensee states that this LAR submission is in accordance with TSTF-425, Revision 3, which explicitly excludes purely event driven SRs from being eligible for incorporation into the SFCP.

Based on the above discussion, provide a technical justification for deviating from the TSTF-425 requirements or if necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-7

Exelon will not relocate SR 4.6.5.3 to the SFCP.

Attachment 2 to this letter contains the revised TS page.

Note: With the withdrawal of this SR, page 266 will contain no mark-up associated with this License Amendment Request (LAR), and therefore, it will not be part of this LAR.

STSB RAI-8

In Attachment-3 of the LAR submittal, the licensee proposed to incorporate control of the following SR frequencies into the SFCP:

- Frequencies associated with individual SRs 4.1.3.e, 4.1.4.a, 4.2.5.b(1), 4.3.2.b, 4.3.6.c(2), 4.6.3.a, 4.6.12.b, 4.6.13.b and

- SR frequencies listed in the following tables: 4.6.2b (parameters: 2, 6, 7, 8), 4.6.2g (parameters: 6, 7), 4.6.2i (parameters: a, b), 4.6.11 (parameters: 3, 4, 5, 7, 8), 4.6.13-1 (parameters: Reactor Water Temperature, Torus Water Temperature, Emergency Condenser Water Level, Drywell Temperature, and "All Rods In" Light).

These SR frequencies contain verbiage (e.g., refueling outage, major refueling outage, refueling cycle), which indicates that SR performance is based on a refueling outage event. In the licensee's submission it was unclear whether or not all of these SRs were frequency based or, possibly, purely event driven. For example, if performance of an SR is mandated every time the unit is transitioned to a plant shutdown condition during an operating cycle (i.e., not during a major refueling outage), then this SR would be considered purely event driven. The licensee states that this LAR submission is in accordance with TSTF-425, Revision 3, which explicitly excludes purely event driven SRs from being eligible for incorporation into the SFCP.

Based on the above discussion, address each of the aforementioned SR frequencies and indicate whether they are frequency based or purely event driven. If the SRs are purely event driven, justify their inclusion into the SFCP or if necessary, modify the submittal as appropriate.

Exelon Response to STSB RAI-8

Nine Mile Point Unit 1 (NMP-1) TS defines Major Refueling Outage as:

> "For the purpose of designating frequency of testing and surveillance, a major refueling outage shall mean a regularly scheduled refueling outage (emphasis added); however, where such outages occur within 8 months of the end of the previous refueling outage, the test or surveillance need not be performed until the next regularly scheduled outage."

The definition clearly indicates that performance of Surveillances containing the described verbiage (e.g., refueling outage, major refueling outage, refueling cycle), are based on a "regularly scheduled" interval and they are not event driven. This interpretation is consistent with the Technical Specification Task Force -425 (TSTF-425) and the marked up pages of the Boiling Water Reactor 4 Standard Technical Specifications (BWR4/STS).

Because NMP-1 has custom Technical Specifications (TS), it does not define refueling outage, major refueling outage, or refueling cycle in terms of a specific frequency interval (e.g., 18 months, 24 months) in a similar manner as the BWR4/STS, which was used by the TSTF-425. However, it is clear that TSTF 425 relocates these SR frequencies to the SFCP. The STS Bases clearly establishes the equivalency between the 18-month (24-month) SR frequencies in the STS to refueling outage statement in the NMP-1 custom TS.

Exelon has previously utilized this interpretation successfully in obtaining approval of similar license amendments for Oyster Creek and Three Mile Island, which like NMP-1 have custom TS.

ATTACHMENT 2

LICENSE AMENDMENT REQUEST
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
DOCKET NOs. 50-220

REVISED TECHNICAL SPECIFICATIONS PAGES

TABLE 4.6.2a

INSTRUMENTATION THAT INITIATES SCRAM

Surveillance Requirement

	Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(1)	Manual Scram	None	~~Once per week~~	~~Once per 3 months~~[1]
(2)	High Reactor Pressure	None	~~Once per 3 months~~[1]	~~Once per 3 months~~[1]
(3)	High Drywell Pressure	None	~~Once per 3 months~~[1]	~~Once per 3 months~~[1]
(4)	Low Reactor Water Level	~~Once/day~~	~~Once per 3 months~~[1]	~~Once per 3 months~~[1]
(5)	High Water Level Scram Discharge Volume	None	~~Once per 3 months~~	~~Once per 3 months~~
(6)	Main-Steam-Line Isolation Valve Position	None	~~Once per 3 months~~	~~Once per operating cycle~~
(7)	Deleted			

Note 1 (Sensor Check, Once per week)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Test)
Note 1 (Once per 3 months, Instrument Channel Calibration)
Note 1 (Once per 3 months, Instrument Channel Calibration)
Note 1 (Once per 3 months, Instrument Channel Calibration)
Note 1 (Once per 3 months, Instrument Channel Calibration)
Note 1 (Once per operating cycle, Instrument Channel Calibration)
(I) (Once per week, Once per 3 months)
(I) (Once per 3 months, Once per 3 months)
(I) (Once per 3 months, Once per 3 months)

In its May 8, 1997 letter, the NRC required that the licensee submit an application for amendment to address the differences between the current TS conductivity limits for reactor coolant chemistry and the analysis assumptions for the core shroud crack growth evaluations. The purpose of this specification is to limit intergranular stress corrosion cracking (IGSCC) crack growth rates through the control of reactor coolant chemistry. The LCO values ensure that transient conditions are acted on to restore reactor coolant chemistry values to normal in a reasonable time frame. Under transient conditions, potential crack growth rates could exceed analytical assumptions, however, the duration will be limited so that any effect on potential crack growth is minimized and the design basis assumptions are maintained. The plant is normally operated such that the average coolant chemistry for the operating cycle is maintained at the conservative values of < 0.19 µmho/cm for conductivity and < 5 ppb for chloride ions and < 5 ppb for sulfate ions. This will ensure that the crack growth rate is bounded by the core shroud analysis assumptions. Since these are average values, there are no specific LCO actions to be taken if these values are exceeded at a specific point in time. The EPRI "BWR Water Chemistry Guidelines-1996 Revision" (EPRI TR-103515-R1, BWRVIP-29) action level 1 guidelines suggest that if conductivity is above 0.3 µS/cm, or chloride or sulfate ions exceed 5 ppb, that corrective action be initiated as soon as possible and to restore levels below level 1 within 96 hours. If the parameters are not reduced to below these levels within 96 hours, complete a review and implement a program and schedule for implementing corrective measures.

Specifications 3.2.3a, b, and c are consistent with the licensee's commitment to Table 4.4 of the BWR water chemistry guidelines. The 24 hour action time period for exceeding the coolant chemistry limits described in 3.2.3a and b ensures that prompt action is taken to restore coolant chemistry to normal operating levels. The requirement to commence a shutdown within 1 hour, and to be shutdown and reactor coolant temperature be reduced to < 200 degrees F within 10 hours minimizes the potential for IGSCC crack growth. Reactor water samples are analyzed daily to ensure that reactor water quality remains within the BWR water chemistry guidelines. These samples are analyzed and compared to action level 1 values.

The conductivity of the reactor coolant is ~~continuously~~ periodically monitored~~. The continuous conductivity monitor~~ , and is visually checked ~~shiftly~~ in accordance with procedures. The monitor alarms at the local panel. The recorder, which is located in the Control Room, alarms in the Control Room. The samples of the coolant which are analyzed for conductivity ~~daily~~ will serve as a comparison with the continuous conductivity monitor. The primary sample point for the reactor water conductivity samples is the non-regenerative heat exchanger in the reactor water cleanup system. An alternate sample point is the #11 recirculation loop. The reactor coolant samples will also be used to determine the chloride and sulfate concentrations. ~~Therefore, the sampling frequency is considered adequate to detect long-term changes in the chloride and sulfate ion content.~~ However, if the conductivity becomes abnormal (>0.19 µmho/cm), other than short term spikes, chloride and sulfate measurements will be made within 8 hours to assure that the normal limits (< 5 ppb of chloride or sulfate ions) are maintained. A short term spike is defined as a rise in conductivity (> 0.19 µmho/cm) such as that which could arise from injection of additional feedwater flow for a duration of approximately 30 minutes in time. These actions will minimize the potential for IGSCC crack growth.

INSERT 3

NMP1 will use Noble Metal Chemical Addition (NMCA) as a method to enhance the effectiveness of Hydrogen Water Chemistry (HWC) in mitigating IGSCC. NMCA will result in temporary increases in reactor coolant conductivity values during and following application. During application, the conductivity limit specified in 3.2.3a and 3.2.3c.1 is increased to 20 µmho/cm. The application period includes post-NMCA injection cleanup activities conducted prior to returning the plant to power operation. An increase in conductivity is expected principally due to residual ionic species from the NMCA. However, these species have minor effects on IGSCC and are, therefore, acceptable. During NMCA, samples will be obtained from the temporary skid which is placed in service during the NMCA injection process.

in accordance with the Surveillance Frequency Control Program, and

INSERT 1

LIMITING CONDITION FOR OPERATION

(2) The valve can be closed by gravity, when released after being opened by remote or manual means, to within not greater than the equivalent of 0.06 inch at the bottom of the disk.

(3) The position alarm system will annunciate in the control room if the valve opening exceeds the equivalent of 0.06 inch at the bottom of the disk.

b. Any drywell-suppression chamber vacuum breaker may be non-fully closed as indicated by the position indication and alarm systems provided that drywell to suppression chamber differential pressure decay rate is demonstrated to be not greater than 25% of the differential pressure decay rate for all vacuum breakers open the equivalent of 0.06 inch at the bottom of the disk.

SURVEILLANCE REQUIREMENT

b. ~~Refueling Outage Tests~~

(1) All suppression chamber - drywell vacuum breakers shall be tested to determine the force required to open each valve from fully closed to fully open.

(2) All suppression chamber - drywell vacuum breaker position indication and alarm systems shall be calibrated and functionally tested.

INSERT 1

(3) ~~Once each operating cycle,~~ each vacuum breaker valve shall be visually inspected to ensure proper maintenance and operation.

(4) A drywell to suppression chamber leak rate test shall demonstrate that with an initial differential pressure of not less than 1.0 psi, the differential pressure decay rate shall not exceed the equivalent of the leakage rate through a 1-inch orifice.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3. A complete inventory of radioactive by-product materials, exceeding the limits set forth in 10 CFR 30.71, in sealed sources in possession shall be maintained current at all times.	2. The periodic leak test required does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another user unless they have been leak tested within six months prior to the date of use or transfer. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, sealed sources shall not be put into use until tested. 3. Start-up sources shall be leak tested within 31 days prior to being subjected to core flux and following any repair or maintenance.