

10 CFR 50.90

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November 2, 2018

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:** Supplement to the Response to Request for Additional Information by the Office of Nuclear Reactor Regulation to Support Review of Nine Mile Point Nuclear Station, Unit 1, License Amendment Request to Apply TSTF-542, Revision 2, Reactor Pressure Vessel Water Inventory Control

- References:**
1. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request-Revise Technical Specifications to Apply TSTF-542, 'Reactor Pressure Vessel Water Inventory Control,' Revision 2," dated December 15, 2017
  2. Email from M. Marshall (Senior Project Manager, U.S. Nuclear Regulatory Commission) to R. Reynolds (Exelon), "Nine Mile Point, Unit 1-Request for Additional Information Regarding Reactor Pressure Vessel Water Inventory Control License Amendment request (L-2017-LLA-0426)," dated August 15, 2018
  3. Letter from J. Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information by the Office of Nuclear Reactor Regulation to Support Review of Nine Mile Point Nuclear Station, Unit 1, License Amendment Request to Apply TSTF-542, Revision 2, Reactor Pressure Vessel Water Inventory Control," dated October 1, 2018

By letter dated December 15, 2017 (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 apply Technical Specification Task Force (TSTF)-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control."

A public meeting was held on August 7, 2018, between Exelon and the NRC to discuss the license amendment request to revise the NMP1 TS by replacing existing requirements related to "operations with a potential for draining the reactor vessel" with new requirements on reactor pressure vessel water inventory control with a focus on the proposed technical specifications mark-ups provided in Reference 1.

On August 15, 2018 (Reference 2), the NRC identified areas where additional information was necessary to complete the review. A public meeting was held on September 13, 2018, to discuss the planned RAI response with the NRC Staff.

On October 1, 2018, Reference 3 was submitted in response to the questions of Reference 2.

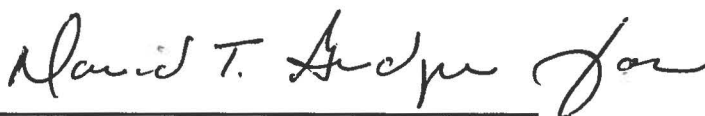
Attachment 1 to this letter contains a supplement to the NRC's request for additional information. Attachment 2 to this letter contains the marked-up TS and TS Bases pages supporting the supplemental information. This supplemental information was discussed with the NRC during the public meeting held on October 18, 2018. Attachment 3 contains the clean TS pages supporting the supplemental information.

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 2<sup>nd</sup> day of November 2018.



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

Attachment 1: Supplement to Response to Request for Additional Information  
Attachment 2: Revised TS and TS Bases Markup Pages  
Attachment 3: Revised TS Clean Pages

U.S. Nuclear Regulatory Commission  
Supplement to Response to Request for Additional Information  
TSTF-542, Reactor Pressure Vessel Water Inventory Control  
Docket No. 50-220  
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cc:	USNRC Region I Regional Administrator	w/attachments
	USNRC Senior Resident Inspector – NMP	"
	USNRC Project Manager, NRR – NMP	"
	A. L. Peterson, NYSERDA	"

**ATTACHMENT 1**

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

Supplement to Response to Request for Additional Information



The following RAIs are addressed in this supplement and reflect the information as a result of the public meeting with the NRC on October 18, 2018.

- RAI (1)(b) - supplement to the original response.
- RAI (1)(d) - original response superseded by this supplement.
- RAI (1)(e) - original response superseded by this supplement.
- RAI (4) - original response superseded by this supplement.
- RAI (5) - original response superseded by this supplement.
- RAI (6) - original response superseded by this supplement.
- RAI (9) - supplement to the original response.

The supplemental information responses in Attachment 1 are formatted by starting with the original RAI question from Reference 2 followed by Exelon's original RAI response from Reference 3, then followed by supplemental to Exelon's original RAI response.

The revised TS and TS Bases pages in Attachment 2 are formatted to retain all previous markups as well as the new supplemental information. All new supplemental information is annotated in red text outlined in blue. Italicized notes are included on the markups to summarize the supplemental information.

**RAI (1):**

- b) Since the NMP1 core spray design does not have channels that start an entire ECCS subsystem, as described in the TSTF-542, revision 2 bases for STS 3.3.5.2, provide technical justification for the "Manual" parameter under the "Start Core Spray Pumps" function in Proposed TS Marked-Up Tables 3.6.2m and 4.6.2m.

**Original Exelon Response to RAI (1)**

- b) The manual parameter for the NMP1 Start Core Spray pumps is removed from Tables 3.6.2.m and 4.6.2.m. The NMP1 design does not include a single button or switch to provide for a full system start. As a result of removing the Manual Parameter for Start Core Spray Pumps, the remaining parameter in Table 3.6.2m and 4.6.2m is reformatted by changing the number from (2) to (1) and deleting the conditional description, "and (1) above." This allows for the revised pages 247b and 247d to read correctly with Reactor Pressure as the required parameter. Additionally, this results in note (b) being removed from the Notes Table and on page 247b. All remaining notes are re-sequenced. Corresponding changes are made to the TS Bases (page 248a) and included in Attachment 2 for your information.

**Supplement to Original Exelon Response to RAI (1)**

This information supplements the original response to RAI (1) b submitted by Reference 3.

- b) Additionally, because the NMP1 design does not include a single button or switch to provide for a full system start, the wording of the re-sequenced Note (b) is revised from, "The

Instrumentation that initiates the Core Spray System..." to, "The Instrumentation that allows for injection of the Core Spray System..." This is consistent with the purpose of Open Core Spray Discharge Valves Parameter. In addition, Note (b) is relocated on Table 3.6.2m from the Parameter column to the Reactor Mode Switch Position columns to be consistent with the NMP1 Custom Technical Specification (CTS) convention.

**RAI (1):**

- d) On Page 79a of the Proposed TS Marked-Up, Specification e of Surveillance Requirement 4.1.9 states, "Verify the required core spray subsystem actuates on a manual initiation signal, in accordance with the Surveillance Frequency Control Program." Considering that the NMP1 core spray design does not have manual initiation capability to start an entire subsystem with a manual initiation channel, please provide technical justification for Specification e.

**Original Exelon Response to RAI (1)**

- d) Specification e of Surveillance Requirement 4.1.9 is removed from page 79b. See Attachment 2 for the revised Specification 3.1.9 and 4.1.9. As described in the response to RAI(1)(b) above, NMP1 does not have the manual initiation capability as described in TSTF-542, Rev 2.

**Supplement to Original Exelon Response to RAI (1)**

This response supersedes, in its entirety, the response to RAI (1) d submitted by Reference 3.

- d) Specification e of Surveillance Requirement 4.1.9 is restored to page 79b and revised from its original content to state, "Verify the required Core Spray subsystem can be manually operated, in accordance with the Surveillance Frequency Control Program. Vessel spray may be excluded." NMP1 does not have the manual initiation capability as described in TSTF-542, Rev 2. The NMP1 Core Spray system is able to be manually started through the use of control switches in the main control room, as verified by the surveillance test. The revised page 79b is provided in Attachment 2.

**RAI (1):**

- e) On page 247b of the Proposed TS Mark-Up, the Table 3.6.2m parameter, "Reactor Pressure and (1) above," listed under Open Core Spray Discharge Valves has "1 per pump" in the columns for "Minimum No. of Tripped or Operable Trip Systems" and "Minimum No. of Operable Instrument Channels per Operable Trip System." This parameter originated from Table 3.6.2d, which has "2" in the same columns. This requirement is similar to the TSTF-542 standard technical specification (STS) Table 3.3.5.2-1 Function 1.a, Core Spray - Reactor Steam Dome Pressure - Low (Injection Permissive). This function's mode 4 and 5

requirements were moved from STS Table 3.3.5.1-1 Function 1.c; the same number of required channels per function were maintained in Table 3.3.5.2-1.

The LAR includes technical justifications for several variations from TSTF-542, Revision 2, but the LAR does not include a technical justification for this variation. Provide technical justification for this variation.

#### **Original Exelon Response to RAI (1)**

- e) The Table 3.6.2m, Parameter (2), is revised from 1 per pump to 2 for the Minimum No. of Tripped or Operable Trip Systems and for the Minimum No. of Operable Instrument Channels per Operable Trip System. This is consistent with TSTF-542, Rev 2 Table 3.3.5.2-1, Function 1.a Core Spray Reactor Steam Dome Pressure – Low (Injection Permissive). The revised Table 3.6.2m and 4.6.2m is provided in Attachment 2.

#### **Supplement to Original Exelon Response to RAI (1)**

This response supersedes, in its entirety, the response to RAI (1) e submitted by Reference 3.

- e) The Table 3.6.2m, Parameter (2), is revised from "1 per pump" to "2" for the Minimum No. of Tripped or Operable Trip Systems. The Minimum No. of Operable Instrument Channels per Operable Trip System is revised from "1 per pump" to "1." The configuration of the circuitry is one-out-of-two, taken twice. There are two trip systems, labeled 11 and 12. Each trip system has two channels, with only one channel required from trip system 11 (either 11-1 or 11-2), and one channel required from trip system 12 (either 12-1 or 12-2). This is consistent with TSTF-542, Rev 2, Table 3.3.5.2-1, Function 1.a, Core Spray Reactor Steam Dome Pressure – Low (Injection Permissive). The revised Table 3.6.2m and 4.6.2m is provided in Attachment 2.

#### **RAI (4):**

The licensee proposed NMP1 TS Marked-Up Tables 3.6.2m and 4.6.2m to capture the TSTF-542, Revision 2, RPWWIC instrumentation requirements. The notes for these proposed tables are similar to the TSTF-542, Revision 2 STS 3.3.5.2 conditions, required actions, and completion times. Specifically, proposed NMP1 Marked-Up Tables 3.6.2m and 4.6.2m notes (d) and (e) are similar to TSTF-542, Revision 2, STS 3.3.5.2 Conditions D and E, respectively. The LAR describes the variations from TSTF-542, Revision 2. However, the application does not contain an explanation for how the equivalents to Conditions A, B, and C in TSTF-542, Revision 2 STS 3.3.5.2 were incorporated. The LAR includes technical justifications for several variations from TSTF-542, Revision 2, but the LAR does not include a technical justification for this variation.

Provide justification for the variation from the TSTF-542, Revision 2 conditions, required actions, and completion times.

#### **Original Exelon Response to RAI (4)**

The proposed revision to the NMP1 TS Tables 3.6.2m and 4.6.2m are structured in the NMP1 custom technical specification format.

STS 3.3.5.2, Condition A requires entering the condition referenced in Table 3.3.5.2-1 for the channel. To be consistent with the NMP1 custom technical specification format, the notes in Table 3.6.2m and 4.6.2m have been modified to include the requirements of Condition B and C, described below. This variation is acceptable.

STS 3.3.5.2, Condition B is associated with vessel isolation and requires declaring associated penetration flow path(s) incapable of automatic isolation and calculating drain time. A note (g) has been added for Tables 3.6.2m and 4.6.2m on page 247h to perform this action. This is consistent with the format of the NMP1 custom technical specifications and is an acceptable variation. The marked-up page 247h is provided in Attachment 2.

STS 3.3.5.2, Condition C requires placing the instrument channel into trip, with a 1-hour completion time, and is associated with the water injection functions. A note (h) has been added to Notes for Tables 3.6.2m and 4.6.2m on page 247h to include this requirement. This is an acceptable variation. The marked-up page 247h is provided in Attachment 2.

#### **Supplement to Original Exelon Response to RAI (4)**

This Response supersedes, in its entirety, the response to RAI (4) submitted by Reference 3. This Response also revises the original submittal (Reference 1), Section 2.2.5, Instrumentation Technical Specification Variations (Table 3.3.5.2-1).

The format of this supplement lists the individual TSTF-542, Revision 2, ACTION from STS 3.3.5.2, followed by how that ACTION is captured in NMP1 Tables 3.6.2m and 4.6.2m, to align to the NMP1 CTS format. Additionally, the notes for Tables 3.6.2m and 4.6.2m are updated as described below to ensure consistent implementation of the RPV WIC requirements and concept into this new instrumentation table.

Additionally, a cross-reference table of the changes to RAI (4) is included at the end of this supplemental information response starting on page 9 of 12. This cross-reference table is provided to summarize the changes and facilitate the review of the Notes for Tables 3.6.2m and 4.6.2m.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.	Immediately

NMP1 implementation of Condition A:

STS 3.3.5.2, Condition A requires entering the Condition referenced in Table 3.3.5.2-1 for the channel. To be consistent with the NMP1 CTS format, the notes in Table 3.6.2m and 4.6.2m are modified to include the requirements of Conditions B through E directly into the table. This incorporates Condition A into the NMP1 custom format, as described for the implementation of each Condition below. This variation is acceptable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1	B.1 Declare associated penetration flow path(s) incapable of automatic isolation.	Immediately
	<u>AND</u> B.2 Calculate DRAIN TIME.	Immediately

NMP1 implementation of Condition B.

STS Table 3.3.5.2-1, Condition B, is associated with isolation of penetration flow paths credited in calculating Drain Time. For NMP1 this is addressed on page 247c for Table 3.6.2m as the parameters for Primary Coolant Isolation on a Low-Low Reactor Water Level signal for 1(a) for Cleanup isolation and 1(b) for Shutdown Cooling isolation. Note (g) was added by the RAI response (Reference 3) to require declaring the associated penetration flow paths incapable of automatic isolation and calculating drain time. This addition of Note (g) in the RAI response (Reference 3) was incorrect and is removed in this supplement. The original submittal (Reference 1) included Note (e), which was copied from the original NMP1 TS Table 3.6.2b.

Note (e) was modified to include the actions of Condition B; however, it retained incorrect information from Table 3.6.2b from which it was derived. The RAI response re-sequenced Note (e) to Note (c) but did not remove the incorrect information. The re-sequenced Note (c) is revised to delete the first sentence starting, "In the cold shutdown and refueling conditions..." This sentence is a restatement of the applicability which is annotated on Table 3.6.2m in Note (a). This clarification was necessary when included in Table 3.6.2b but is not necessary when transferred to the new Table 3.6.2m. The re-sequenced Note (c), sub item 3, is deleted as this is not required for Condition B. The completion time of, "Immediately," is added to re-sequenced Note (c). Additionally, re-sequenced Note (c) is revised to include the applicability Note (b) in Table 3.3.5.2-1 which states, "When automatic isolation of the associated penetration flow path(s) is credited in calculating drain time." The Condition A requirement of, "One or more channels inoperable," is also added to re-sequenced Note (c). The application of re-sequenced Note (c) is corrected in Table 3.6.2m by applying only to Parameter (1)(a) and (1)(b).

In Reference 1, Note (d) was transferred from Table 3.6.2b as Note (f) to include the 6 hour surveillance note. This 6 hour surveillance note is not required for the new Reactor Pressure Vessel Water Inventory Control instrumentation table and is removed. The new Note (d) in Table 3.6.2m had been incorrectly modified with the requirements of Condition B, which are contained in Note (c), and carried forward requirements associated with Table 3.6.2b that do not align with the RPV WIC concepts per TSTF-542 and these details have been deleted. Because Notes (c) and (d) are applied to the same parameter, repeating the information in Note (d) is not necessary. The combined changes described above result in removing Note (d) from NMP1 CTS page 247g. This also negates the need to clarify the cross-reference to Specification 3.6.2a (13) provided in the response to RAI 6 of Reference 3. The TS bases pages 249 and 249a have been revised to align with these changes. Removing Note (d) results in re-sequencing the remaining notes. This is summarized in the cross-reference table at the end of the RAI (4) supplement.

The allowable value referenced in the STS Table 3.3.5.2-1 is equivalent to Set Point in the NMP1 CTS format. The surveillance requirements from STS Table 3.3.5.2-1 are reflected in NMP1 CTS Table 4.6.2m.

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	C.1 Place channel in trip.	1 hour



NMP1 implementation of Condition C.

Condition C is associated with the injection permissive instrumentation in STS Table 3.3.5.2-1. For NMP1 CTS, this is the Parameter to Open Core Spray Discharge Valves at the appropriate Reactor Pressure. The RAI response (Reference 3) added Note (h) to Table 3.6.2m, page 247b. With this Supplement, Note (h) is changed to Note (e) since Notes (d) and (g) were deleted as explained in the description above for Implementation of Condition B. See the cross-reference table at the end of the RAI (4) supplement summarizing the note changes. The revised Note (e) on page 247h includes the 1 hour completion time to place the channel in trip and wording changes to align with the NMP1 CTS format for consistency. Note (e) is placed in the column reflecting the Minimum number of Operable Instrument Channels to align with the convention of the NMP1 CTS. This satisfies Condition C and is an acceptable variation.

Additionally, the applicability of the injection permissive parameter is modified with Note (a) to reflect the Shutdown Condition- Cold and Refuel Condition, with cross-reference to the tables for the Shutdown Condition-Hot. The allowable value referenced in the STS Table 3.3.5.2-1 is equivalent to Set Point in the NMP1 CTS format. The surveillance requirements from STS Table 3.3.5.2-1 are reflected in NMP1 CTS Table 4.6.2m.

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1 Restore channel to OPERABLE status.	24 hours

NMP1 implementation of Condition D.

Condition D is associated with ensuring minimum flow protection when Core Spray system initiates or the Manual Initiation action. As described in the responses to RAI (1)(b) and RAI (2) (Reference 3), the NMP1 design does not include the Manual Initiation function described in TSTF-542. The NMP1 design does not have a minimum flow bypass. This function is provided by a relief valve on the discharge of the Core Spray pump to provide minimum flow protection and does not have instrumentation for opening. The water is redirected back to the Torus when the relief valve opens. This is described in the NMP1 UFSAR, Chapter VII, Section 2.1. There are no instruments or channel to restore and Condition D is not implemented. This is an acceptable variation based on the NMP1 design.

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Declare associated low pressure ECCS injection/spray subsystem inoperable.	Immediately

NMP1 implementation of Condition E.

Condition E is implemented by Note (e) in Table 3.6.2m. This requirement is added to Note (e) because Condition C is the only applicable condition. The format is modified to be consistent with the NMP1 CTS format.

**Surveillance Requirements for 3.3.5.2**

The TSTF-542, Revision 2 Surveillance Requirements (SR) are listed below, followed by the NMP1 implementation into the CTS format. The NMP1 TS definitions for Sensor Check and Instrument Channel Test are similar in definition to the STS CHANNEL CHECK and CHANNEL FUNCTIONAL TEST, respectively. The use of the NMP1 CTS terminology is an acceptable variation.

SR 3.3.5.2.1, Perform CHANNEL CHECK is applicable to STS Table 3.3.5.2-1 Function 1.a for Core Spray injection permissive, Function 3.a for RHR System Isolation and Function 4.a for RWCU System Isolation. For NMP1 CTS format, this is applied to Table 4.6.2m Open Core Spray Discharge Valves parameter as a Sensor Check (Page 247d) and to the Primary Coolant Isolation Parameter for Low-Low Reactor Water Level (Page 247e). The Manual Isolation Parameter does not require a sensor and therefore the Sensor Check SR is not applicable. The Sensor Check associated with the Open Core Spray Discharge Valve parameter aligns with the discussion provided in the supplemental response to RAI (3).

SR 3.3.5.2.2, Perform CHANNEL FUNCTIONAL TEST is applicable to STS Table 3.3.5.2-1 Function 1.a for Core Spray injection permissive, Function 3.a for RHR System Isolation and Function 4.a for RWCU System Isolation. For NMP1 CTS format, this is applied to Table 4.6.2m Open Core Spray Discharge Valves parameter as an Instrument Channel Test (Page 247d) and to the Primary Coolant Isolation Parameters for Low-Low Reactor Water Level and Manual (Page 247e).

SR 3.3.5.2.3, Perform LOGIC SYSTEM FUNCTIONAL TEST, is applicable to STS Table 3.3.5.2-1 for the Manual Initiation Function of Core Spray or Low Pressure Coolant Injection. As discussed in the response to RAI 1 in Reference 3, this function does not apply to the NMP1 design; therefore, this SR is not required for NMP1.



**Cross-Reference Summary for Changes to Notes for Tables 3.6.2m and 4.6.2m**

This table uses columns to summarize the note changes for Tables 3.6.2m and 4.6.2m. The original submittal (Reference 1) included 7 notes (a through g). This supplement to Reference 3 results in 5 notes (a through e).

Reference 1 submittal	Reference 3 submittal	Supplement to Reference 3	Final notes
a	a – no change	a - no change	a
b	b – deleted by RAI 1(b) response		
c	c - becomes (b) with RAI 1(b) response	b – no change from Reference 3	b
d	d - deleted by RAI 1(c) response		
e	e - becomes (c) due to (b) and (c) deleted.	c – no change from Reference 3	c
f	f - becomes (d) due to (b) and (c) deleted.	d – deleted by RAI (4) supplement described above	
g	g - becomes (e) due to (b) and (c) deleted.	e- deleted by supplement to RAI (5) described below	
	f - added by RAI (8) response	f - becomes (d)	d
	g - added by RAI (4) response	g - deleted by RAI (4) supplement described above	
	h - added by RAI (4) response	h - becomes (e)	e

**RAI (5):**

The LAR for NMP1 proposed that Surveillance Requirements Sensor Check, Instrument Channel Test, and Instrument Channel Calibration are to be included in Proposed TS Marked-Up 3.6.2m and 4.6.2m. These SRs differ from the STS SR wording in the equivalent section, TSTF-542, Revision 2 STS 3.3.5.2, of channel check, channel functional test, and logic system functional test. The NMP1 definitions for sensor checks and instrument channel tests are similar to the STS definitions for channel checks and channel functional tests, respectively. However, the NMP1 definition for an instrument channel calibration does not align with the STS definition for a logic system functional test; it is similar to the STS definition for a channel

calibration. The LAR includes technical justifications for several variations from TSTF-542, Revision 2, but the LAR does not include technical justifications for these variations.

Please provide technical justification for the following variations from TSTF-542, Revision 2 in NMP1 Proposed TS Marked-Up Tables 3.6.2m and 4.6.2m:

- a) inclusion of an Instrument Channel Calibration SR, and
- b) omission of an equivalent to the TSTF-542, Revision 2 STS SR 3.3.5.2.3, "Logic System Functional Test."

### **Exelon Response to RAI (5)**

The current NMP1 Custom Technical Specifications do not include Logic System Functional Tests as a requirement; therefore, the Logic System Functional Test SR was not included in the TSTF-542 submittal dated December 15, 2017. The SRs used are consistent with the current NMP1 Custom Technical Specification requirements. The Instrument Channel Calibration is the method used to ensure the circuitry performs as designed and the function is performed. The terminology used in the proposed TS change is consistent with the current NMP1 TS and the testing requirements in the NMP1 license basis. This variation is acceptable and supplements the discussion in Section 2.2.5.1 of Reference 1.

### **Supplement to Original Exelon Response to RAI (5)**

This response supersedes, in its entirety, the response to RAI (5) submitted by Reference 3.

- a) The NMP1 CTS SR for Instrument Channel Calibration is not being applied to the new surveillances added to Table 4.6.2m. See the attached TS markup pages 247d and 247e which this revision. This change aligns with the technical evaluation in TSTF-542, Revision 2, Section 3.3.3, which does not require channel calibrations in the cold shutdown or refuel conditions. This change also results in removing Note (e) associated with Table 4.6.2m. Note (e) was relabeled in Reference 3 and was originally proposed as Note (g) in Reference 1, Section 2.2.5.1. Note (e) is not required because the Instrument Channel Calibration are not required for Table 4.6.2m.
- b) The logic system functional test does not apply to NMP1 CTS as described in the supplemental response to RAI (4) above.

### **RAI (6):**

In the LAR, the interrelationship between some related specifications in the Proposed TS Marked-Up is unclear. For example, in Tables 3.6.2m and 4.6.2m, there are several table notes that state, "...take the ACTION required by Specification 3.6.2a for that Parameter." However, under Specification a of LCO 3.6.2 in the Proposed TS Marked-Up, the actions would require entering the appropriate actions for inoperable core spray subsystems under LCO 3.1.4, which

is only applicable during the "Power Operating Condition or Shutdown Condition – Hot," instead of LCO 3.1.9, which would apply when the reactor coolant temperature is less than or equal to 212 degrees Fahrenheit.

Verify the references related specifications are "linked" to the appropriate specification.

### **Exelon Response to RAI (6)**

When directed to enter Specification 3.6.2a, Sub-Section (13) of 3.6.2a applies because Sub-Section (13) is for RPV WIC and directs the operator to Specification 3.1.9 for actions. The Notes for Tables 3.6.2m and 4.6.2m are revised to reference LCO 3.6.2.a(13). The marked-up Notes for Tables 3.6.2m and 4.6.2m are provided in Attachment 2.

### **Supplement to Original Exelon Response to RAI (6)**

This response supersedes, in its entirety, the response to RAI (6) submitted by Reference 3.

The information provided in Reference 3 included new Note (d) in Table 3.6.2m. This Note (d) incorrectly maintained requirements associated with Table 3.6.2b that do not align with the RPV WIC concepts described in TSTF-542. Therefore, Note (d) is deleted and remaining notes on Table 3.6.2m are re-sequenced. This change is discussed in more detail in the supplemental response to RAI (4) above. This change also eliminates the need to clarify the cross-reference to Specification 3.6.2a (13) as provided in the response to RAI (6) of Reference 3. The annotation of "(13)" is removed from page 247g for the Notes for Table 3.6.2m and 4.6.2m.

The re-sequenced Note (d) and Note (e) provide linkage to Specification 3.1.9 as required by STS Table 3.3.5.2, Table 1.

### **RAI (9):**

TSTF-542, Revision 2 states the following (emphasis added):

[...] an additional method of water injection, *to augment* the newly required ECCS subsystem, *is also required* when the Drain Time is less than 8 hours". This is especially true for action D, "Drain time < 8 hours.

In the LAR, LCO 3.1.9 in the Proposed TS Marked-Up would maintain only one core spray subsystem operable. The application does not contain an explanation for what additional method(s) of water injection would be used especially when drain time is less than 8 hours.

Describe the additional method(s) of injection that would be used when taking the required action described in Specification e(1) of Proposed TS Marked-Up 3.1.9. In the description, state whether the additional method(s) of injection is able to operate without offsite electrical power.

### **Exelon Response to RAI (9)**

Specification 3.1.9 is revised to include the requirement to operate without offsite electrical power. This is consistent with the NMP1 Custom Technical Specification format. The marked-up LCO 3.1.9 (page 79b) is included in Attachment 2.

### **Supplement to Original Exelon Response to RAI (9)**

This response supersedes, in its entirety, the response to RAI (9) submitted by Reference 3:

Specification 3.1.9 is revised to include the requirement to operate without offsite electrical power. This is consistent with the NMP1 Custom Technical Specification format. The marked-up LCO 3.1.9 (page 79b) is included in Attachment 2.

There are several additional methods of water injection that can be used during a loss of offsite power and if Core Spray is not available. The water injection sources powered by the station Emergency Diesel Generators (EDGs) do not require loading shedding actions. The order is based on using reactor water quality sources first. The Control Rod Drive (CRD) system flow would be the first system selected for drain times less than 8 hours.

1. CRD System flow can be raised to provide RPV level control. The CRD pumps are powered by the station EDGs. Two CRD pumps can be operated in parallel for maximum system flow.
2. An alternate high-pressure water injection to the RPV can be accomplished through the Liquid Poison Pumps taking suction from the Liquid Poison Tank. The Liquid Poison Pumps are powered by the station EDGs.
3. An alternate high-pressure water injection to the Reactor Pressure Vessel (RPV) can be accomplished through the Liquid Poison Pumps taking suction from the Demineralized Water Tanks. The Liquid Poison Pumps are powered by the station EDGs.
4. The Containment Spray Raw Water to Core Spray System can be aligned to add water to Containment through the Core Spray header using a Containment Spray Raw Water Pump powered by the station EDGs.
5. The Fire Water System can be aligned to inject water into the RPV through the Reactor Feedwater System piping using the diesel driven fire pump. The diesel driven fire pump is used without off-site electrical power.
6. Portable FLEX pumps can be relocated as needed from their normally stored position and aligned to inject water into the RPV. The FLEX pumps are diesel driven.
7. Portable B.5.b pumps can be relocated as needed from their normally stored position to inject water into the RPV. The B.5.b pumps are diesel driven.

**ATTACHMENT 2**

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

Supplement to Response to Request for Additional Information  
Revised TS and TS Bases Markup Pages

TS Marked-up Pages

79b  
247b  
247c  
247f  
247g  
247h

TS Bases Marked-up Pages  
(for information only)

249  
249a

**LIMITING CONDITION FOR OPERATION**

**SURVEILLANCE REQUIREMENT**

- d. If drain time < 36 hours and ≥ 8 hours, within 4 hours perform the following actions:
  - (1) Verify secondary containment boundary is capable of being established in less than the drain time.
  - and
  - (2) Verify each secondary containment penetration flow path is capable of being isolated in less than the drain time,
  - and
  - (3) Verify one RBEVS is capable of being placed in operation in less than the drain time.
  
- e. If drain time < 8 hours, immediately perform the following actions:
  - (1) Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level above -10 inches indicator scale for ≥ 36 hours.
  - and
  - (2) Initiate action to establish secondary containment boundary,
  - and
  - (3) Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room. and
  - (4) Initiate action to verify one RBEVS is capable of being placed in operation.

- d. Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal, in accordance with the Surveillance Frequency Control Program. RAI 1(d)

~~e. Verify the required core spray subsystem actuates on a manual initiation signal, in accordance with the Surveillance Frequency Control Program. Vessel spray may be excluded.~~

RAIs 9 and 10

without offsite electrical power

e. Verify the required core spray subsystem can be manually operated, in accordance with the Surveillance Frequency Control Program. Vessel spray may be excluded.

*Supplement Note:  
Specification 4.1.9e is reinserted and revised per Supplemental response to RAI 1(d).*



Reviewer notes:  
 Manual Parameter removal RAIs 1(b) and 2  
 Notes (b) & (d) removed per RAIs 1(c) and 1(f) - changed note (c) to (b)  
 Note (f) added per RAI 8.  
 Note (h) added per RAI 4  
 Change from 1 per pump to 2 per RAI 1(e)

TABLE 3.6.2m

RPV WATER INVENTORY CONTROL INSTRUMENTATION

Limiting Condition for Operation

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels per Operable Trip System</u> (h)	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				<u>Shutdown</u>	<u>Refuel</u>	<u>Startup</u>	<u>Run</u>
<u>START CORE SPRAY PUMPS (c)</u>							
(1) Manual	4	4 (d)	—	(a)(b)	(a)(b)		
<u>OPEN CORE SPRAY DISCHARGE VALVES (c)</u> (b)(f)							
(2) (1) Reactor Pressure and (1) above.	1 per pump 2	1 per pump (d) 2	≥ 365 psig	(a)(b)	(a)(b)		

Supplement notes:

Minimum No. of Operable Instrument Channels per Operable Trip System changed from 2 to 1 per Supplement Response to RAI 1(e).  
 Note (f) changed to (d) and Note (h) changed to (e). Notes (b), (d) and (e) relocated to align with the existing format of the NMP1 CTS for consistency per Supplemental Response to RAI (4).

AMENDMENT NO.

Reviewer notes:  
Notes changes per RAIs 1(b), 1(c) and 1(f)  
from (e) to (c) and from (f) to (d).

Supplement Notes:  
Notes (d) and (g) removed and  
Note (c) corrected per  
Supplemental Response to RAI (4)

TABLE 3.6.2m

RPV WATER INVENTORY CONTROL INSTRUMENTATION

Limiting Condition for Operation

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels per Operable Trip System</u> (g)	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				<u>Shutdown</u>	<u>Refuel</u>	<u>Startup</u>	<u>Run</u>
<u>PRIMARY COOLANT ISOLATION</u>							
(1) Low-Low Reactor Water Level							
(a) Cleanup	2	2(f) (c)(d)	≥ 5 inches (Indicator Scale)	(a)	(a)		
(b) Shutdown Cooling	2(e) (e)	2(e)(f) (c)(d)	≥ 5 inches (Indicator Scale)	(a)	(a)		
(2) Manual	2	1	---	(a)	(a)		



Reviewer notes:  
 Manual Parameter removal RAIs 1(b) and 2  
 Notes changes per RAIs 1(b), 1(c) and 1(f)  
 from (g) to (e)  
 Remove Sensor Check SR per RAI 3

TABLE 4.6.2m

RPV WATER INVENTORY CONTROL INSTRUMENTATION

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
<u>START CORE SPRAY PUMPS</u>			
(1) <del>Manual</del>	Note 1	Note 1 <sup>(g)</sup>	Note 1 <sup>(g)</sup>
<u>OPEN CORE SPRAY DISCHARGE VALVES</u>			
(2) (1) Reactor Pressure and (1) above	Note 1 <del>---</del>	Note 1 <sup>(g)</sup> <del>(e)</del>	Note 1 <sup>(g)</sup> <del>(e)</del>

*Supplement notes:  
 Removed note (e) and requirement for Instrument Channel Calibration per RAI (5) supplement.*

**Reviewer notes:**

Notes changes per RAIs 1(b), 1(c) and 1(f) from (g) to (e)

TABLE 4.6.2m

**RPV WATER INVENTORY CONTROL INSTRUMENTATION**  
**Surveillance Requirement**

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
<u>PRIMARY COOLANT ISOLATION</u> (Cleanup and Shutdown Cooling)			
(1) Low-Low Reactor Water Level	Note 1	Note 1 <sup>(g)</sup> <del>(e)</del>	Note 1 <sup>(g)</sup> <del>(e)</del>
(2) Manual	---	Note 1	---

*Supplement notes:*

*Removed note (e) and requirement for Instrument Channel Calibration per RAI (5) supplement.*

Reviewer notes:  
Notes (b) & (d) removed per RAIs 1(c) and 1(f), remaining notes re-sequenced.

Supplement Notes:  
Revised Note (c) per Supplemental  
Response to RAI (4).

NOTES FOR TABLES 3.6.2m AND 4.6.2m

(a) The Parameters in this table are only applicable in the Shutdown Condition – Cold and Refuel. See Table 3.6.2b or Table 3.6.2d for Parameter applicability in the Shutdown Condition – Hot.

~~(b) May be bypassed when necessary for performing major maintenance as specified in Specification 2.1.1.e.~~

allows for injection of

(b) (c) The instrumentation that initiates the Core Spray System is not required to be operable if there is no fuel in the reactor vessel.

~~(d) A channel may be placed in an inoperable status for up to 6 hours for required surveillances without placing the Trip System in the tripped condition provided at least one Operable Instrument Channel in the same Trip System is monitoring that parameter.~~

~~With the number of Operable channels less than required by the Minimum Number of Operable Instrument Channels per Operable Trip System requirement:~~

~~1. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or take the ACTION required by Specification 3.6.2a for that Parameter.~~

~~2. With more than one channel inoperable, take the ACTION required by Specification 3.6.2a for that Parameter.~~

(c) (e) ~~In the cold shutdown and refueling conditions, only one Operable Trip System is required provided shutdown cooling system integrity is maintained.~~

Applicable when automatic isolation of the associated penetration flow path(s) is credited in calculating drain time.

~~With one of the two required Operable Channels in the required Trip System not operable, place the inoperable channel in the tripped condition within 12 hours, otherwise~~ With one or more channels inoperable, immediately

1. Declare associated penetration flow path(s) incapable of automatic isolation,

and

2. Calculate drain time, .

and

3. a. Immediately initiate action to restore the channel to operable status,

or

b. Immediately initiate action to isolate the shutdown cooling system.



Reviewer notes:

Notes (b) & (d) removed per RAIs 1(c) and 1(f), remaining notes re-sequenced.  
Subsection (13) added per RAI 6.

NOTES FOR TABLES 3.6.2m AND 4.6.2m

~~(f)(d) A channel may be placed in an inoperable status for up to 6 hours for required surveillances without placing the Trip System in the tripped condition provided at least one Operable Instrument Channel in the same Trip System is monitoring that Parameter.~~

~~With the number of Operable Channels one less than required by the Minimum Number of Operable Instrument Channels per Operable Trip System requirement for one trip system:~~

- ~~1. Declare associated penetration flow path(s) incapable of automatic isolation,~~  
~~and~~
  - ~~2. Calculate drain time,~~  
~~and~~
  - ~~3. Place the inoperable channel(s) in the tripped condition within,~~
    - ~~a. 12 hours for Parameters common to SCRAM Instrumentation, and~~
    - ~~b. 24 hours for Parameters not common to SCRAM Instrumentation,~~
- ~~or~~
- ~~4. Take the ACTION required by Specification 3.6.2a for that Parameter.~~

(13)

~~With the number of Operable Channels one less than required by the Minimum Number of Operable Instrument Channels per Operable Trip System requirement for both trip systems:~~

- ~~1. Declare associated penetration flow path(s) incapable of automatic isolation,~~  
~~and~~
  - ~~2. Calculate drain time,~~  
~~and~~
  - ~~3. Place the inoperable channel(s) in one trip system in the tripped condition within one hour,~~  
~~and~~
  - ~~4. Place the inoperable channel(s) in the remaining trip system in the tripped condition within,~~
    - ~~a. 12 hours for Parameters common to SCRAM Instrumentation, and~~
    - ~~b. 24 hours for Parameters not common to SCRAM Instrumentation,~~
- ~~or~~
- ~~5. Take the ACTION required by Specification 3.6.2a for that Parameter.~~

(13)

Supplement notes:

Note (d) deleted per Supplemental response to RAI (4). Also removed (13) annotation added in RAI (6) per Supplemental Response to RAI (6).

Reviewer notes:

Notes (b) & (d) removed per RAIs 1(c) and 1(f), remaining notes re-sequenced.

Note (f) added per RAI 8.

Notes (g) and (h) added per RAI 4.

NOTES FOR TABLES 3.6.2m AND 4.6.2m

~~(e)~~ (g) The trip circuit will be calibrated and tested in accordance with the Surveillance Frequency Control Program, the primary sensor will be calibrated and tested in accordance with the Surveillance Frequency Control Program.

Note 1: Surveillance intervals are specified in the Surveillance Frequency Control Program unless otherwise noted in Table 4.6.2m.

~~(f)~~ (d) Associated with the subsystem of Core Spray required to be Operable per Specification 3.1.9, Reactor Pressure Vessel (RPV) Water Inventory Control.

~~(g)~~ With one or more channels inoperable, declare the associated penetration flow paths incapable of automatic isolation and calculate drain time.

~~(h)~~ (e) With the number of Operable channels less than required by the Minimum Number of Operable Instrument Channels per Operable Trip System requirement, place the inoperable channel in a tripped condition within 1 hour, or  
Immediately, declare the associated Core Spray subsystem per Specification 3.1.9 inoperable.

Supplement notes:

Deleted Notes (e) and (g) which were added per response to RAI (4) and relabeled Note (f) to (d) and Note (h) changed to Note (e) to maintain the number sequence, and incorporated the Actions from STS Table 3.3.5.2-1 into Note (e) per Supplemental Response to RAI (4). The wording in the resequenced Note (e) is modified to be consistent with the NMP1 CTS formatting and phrasing.

**ATTACHMENT 3**

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

Supplement to Response to Request for Additional Information  
Revised TS Clean Pages

TS Clean Pages

79b  
247b  
247c  
247d  
247e  
247f

## LIMITING CONDITION FOR OPERATION

- d. If drain time <36 hours and  $\geq 8$  hours, within 4 hours perform the following actions:
- (1) Verify secondary containment boundary is capable of being established in less than the drain time,  
and
  - (2) Verify each secondary containment penetration flow path is capable of being isolated in less than the drain time,  
and
  - (3) Verify one RBEVS is capable of being placed in operation in less than the drain time.
- e. If drain time <8 hours, immediately perform the following actions:
- (1) Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level above -10 inches indicator scale for  $\geq 36$  hours without offsite electrical power,  
and
  - (2) Initiate action to establish secondary containment boundary,  
and
  - (3) Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room,  
and
  - (4) Initiate action to verify one RBEVS is capable of being placed in operation.

## SURVEILLANCE REQUIREMENT

- d. Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal, in accordance with the Surveillance Frequency Control Program.
- e. Verify the required core spray subsystem can be manually operated, in accordance with the Surveillance Frequency Control Program. Vessel spray may be excluded.

**TABLE 3.6.2m**

**RPV WATER INVENTORY CONTROL INSTRUMENTATION**

**Limiting Condition for Operation**

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels per Operable Trip System</u>	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				Shutdown	Refuel	Startup	Run
<u>OPEN CORE SPRAY DISCHARGE VALVES</u>							
(1) Reactor Pressure	2	1(d)(e)	≥ 365 psig	(a)(b)	(a)(b)		



**TABLE 3.6.2m**

**RPV WATER INVENTORY CONTROL INSTRUMENTATION**

**Limiting Condition for Operation**

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels per Operable Trip System</u>	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				<b>Shutdown</b>	<b>Refuel</b>	<b>Startup</b>	<b>Run</b>
<u>PRIMARY COOLANT ISOLATION</u>							
(1) Low-Low Reactor Water Level							
(a) Cleanup	2	2(c)	≥ 5 inches (Indicator Scale)	(a)	(a)		
(b) Shutdown Cooling	2	2(c)	≥ 5 inches (Indicator Scale)	(a)	(a)		
(2) Manual	2	1	—	(a)	(a)		

TABLE 4.6.2m

RPV WATER INVENTORY CONTROL INSTRUMENTATION

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
<u>OPEN CORE SPRAY DISCHARGE VALVES</u>			
(1) Reactor Pressure	---	Note 1	---

TABLE 4.6.2m

RPV WATER INVENTORY CONTROL INSTRUMENTATION

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
<u>PRIMARY COOLANT ISOLATION</u> (Cleanup and Shutdown Cooling)			
(1) Low-Low Reactor Water Level	Note 1	Note 1	---
(2) Manual	---	Note 1	---

### NOTES FOR TABLES 3.6.2m AND 4.6.2m

- (a) The Parameters in this table are only applicable in the Shutdown Condition – Cold and Refuel. See Table 3.6.2b or Table 3.6.2d for Parameter applicability in the Shutdown Condition – Hot.
- (b) The instrumentation that allows for injection of the Core Spray System is not required to be operable if there is no fuel in the reactor vessel.
- (c) Applicable when automatic isolation of the associated penetration flow path(s) is credited in calculating drain time. With one or more channels inoperable, immediately
  1. Declare associated penetration flow path(s) incapable of automatic isolation,and
  2. Calculate drain time.
- (d) Associated with the subsystem of Core Spray required to be Operable per Specification 3.1.9 Reactor Pressure Vessel (RPV) Water Inventory Control.
- (e) With the number of Operable channels less than required by the Minimum Number of Operable Instrument Channels per Operable Trip System, place the inoperable channel in a tripped condition within 1 hour,  
or  
Immediately, declare the associated Core Spray subsystem per Specification 3.1.9 inoperable.

Note 1: Surveillance intervals are specified in the Surveillance Frequency Control Program unless otherwise noted in Table 4.6.2m.