



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 28, 2017

LICENSEE: Exelon Generation Company, LLC

FACILITY: Nine Mile Point Nuclear Station, Unit 2

SUBJECT: SUMMARY OF MARCH 9, 2017, MEETING WITH EXELON GENERATION COMPANY, LLC, REGARDING LICENSE AMENDMENT REQUEST TO ADOPT TECHNICAL SPECIFICATION TASK FORCE (TSTF) TRAVELER TSTF-542 (CAC NO. MF9357)

On March 9, 2017, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Exelon Generation Company, LLC (Exelon, the licensee) via webinar and conference call. The purpose of the meeting was to discuss variations in the Nine Mile Point, (NMP), Unit 2, license amendment request (LAR) from Technical Specifications Task Force Traveler (TSTF) 542, "Reactor Pressure Vessel Water Inventory Control." The meeting notice and agenda, dated February 27, 2017, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML17062A361. A list of attendees is provided as Enclosure 1.

An annotated excerpt from the NMP, Unit 2, LAR was used to facilitate discussions during the meeting (see Enclosure 2). A copy of the entire NMP, Unit 2, LAR, which was submitted to the NRC on February 28, 2017, is available in ADAMS at Accession No. ML17059C963. For each numbered item in the excerpt, the licensee described the variation from the TSTF-542 model application (ADAMS Accession No. ML16074A448) and the reason for the variation. The Exelon representatives noted that the TSTF-542 model application is based on the Boiling-Water Reactor (BWR)/6 Standard Technical Specification (STS) and that NMP, Unit 2, is a BWR/5; therefore, some of the variations are due to the difference between a BWR/6 STS and NMP, Unit 2, BWR/5 technical specification. Throughout the meeting, the NRC staff asked clarifying questions concerning the extent of changes from TSTF-542 model application, especially concerning any changes to instrumentation design. In response to a question from the NRC staff concerning instrumentation design, an Exelon representative stated that no changes were made to the instrumentation design.

No regulatory decisions were made during the meeting. Members of the public were in attendance. Public Meeting Feedback forms were distributed via webinar survey. No Public Meeting Feedback forms were received.

Please direct any inquiries to me at 301-415-2871, or [Michael.Marshall@nrc.gov](mailto:Michael.Marshall@nrc.gov).



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Office of Nuclear Reactor Regulation

Docket No. 50-410

Enclosures:

1. List of Attendees
2. Annotated Excerpt from the NMP, Unit 2, LAR

cc w/encls: Distribution via Listserv

LIST OF ATTENDEES

MARCH 9, 2017, MEETING WITH EXELON GENERATION COMPANY, LLC

REGARDING LICENSE AMENDMENT REQUEST TO ADOPT

TECHNICAL SPECIFICATION TASK FORCE (TSTF) TRAVELER TSTF-542

<b>Name</b>	<b>Organization</b>
Rossnyev Alvarado	U.S. Nuclear Regulatory Commission (NRC)
Pasquale Bartolini	Exelon Generation Company, LLC (Exelon)
Bob Beaumont	Exelon
John Driscoll	Exelon
Ravinder Grover	NRC
Russell Haskell	NRC
Alex Klein	NRC
Ken Kristensen	Exelon
Michael Marshall	NRC
Mitch Mathews	Public
Steve Nicholas	Exelon
Eric Oesterle	NRC
Shie-Jeng Peng	NRC
Ron Reynolds	Exelon
Brandon Shultz	Exelon
Daniel Warner	NRC
Khadijah West	NRC
Diana Woodyatt	NRC

ANNOTATED EXCERPT FROM THE NINE MILE POINT, UNIT 2,  
LICENSE AMENDMENT REQUEST

See next page.

An existing administrative error is being corrected with this change. In the NMP2 TS Section 3.3.7.1, Table 3.3.7.1-1, the Functions in the current NMP2 TS are numbered 1, 2, 2. The number scheme is being revised to 1, 2, 3. This TS Section is being changed to support TSTF-542 implementation.

## 2.2 Variations

Exelon is proposing the following variations from the TS changes described in TSTF-542. These variations do not affect the applicability of TSTF-542 or the NRC staff's Safety Evaluation to the proposed license amendment.

1 The NMP2 TS contain a Surveillance Frequency Control Program. Therefore, the Surveillance Requirement (SR) frequencies for Specification 3.5.2 are "In accordance with the Surveillance Frequency Control Program."

2 The NMP2 TS include Amendment No. 150 (Reference 3) for TSTF-523, "Generic Letter 2008-01, Managing Gas Accumulation." The following changes have no effect on the adoption of the TSTF-542 and are an acceptable variation:

- 2a • SR 3.5.2.4 has been modified from; "Verify, for the required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve," to; "Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- 2b • SR 3.5.2.5 has been modified to retain the NOTE, "Not required to be met for system vent flow paths opened under administrative control."

3 The NMP2 TS Section 3.3.5.1 is modified to accommodate the existing NMP2 instrumentation configuration and is aligned to the BWR/6 Standard Technical Specifications (STS), without a setpoint control program. Changes to these instrumentation functions are justified by the discussion in Section 3.4.1 of the TSTF-542 justification. The following changes have no effect on the adoption of the TSTF-542 and are acceptable variations:

- 3a • In LCO 3.3.5.1, the following Required Actions are revised to include the applicable Functions from table 3.3.5.1-1. See the discussion below for each Function for clarification of each of these variations to Table 3.3.5.1-1.
  - o B.1 adds applicability for Functions 1.c, 1.d, 2.c, and 2.d.
  - o C.1 changes the applicability to Functions 1.e, 1.f, 1.g, 1.h, 1.i, 1.j, 2.e, 2.f, 2.g, 2.h, and 2.i.
  - o E.1 changes the applicability to Functions 1.k, 1.l, and 2.j.
- 3b • The Note 2 preceding the Surveillance Requirements is clarified to state actions may be delayed for up to 6 hours. The listing of specific Functions is no longer necessary due to implementation of TSTF-542. Note 2 is in the current approved NMP2 TS and was implemented during the original conversion to the Improved STS for NMP2. This Note is based on reliability analyses (References 4 and 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6-hour testing allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

- 3c • Table 3.3.5.1-1 does not contain the Notes c and d from the BWR/6 STS, therefore, relabeling these Notes is not required.
- 3d • Table 3.3.5.1-1 Function 1. Low Pressure Coolant Injection - A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems:
- The ECCS Instrumentation for NMP2 includes additional Functions 1.a. Reactor Vessel Water Level - Low, Level 3, and 1.d. Drywell Pressure-High (Boundary Isolation), to isolate Residual Heat Removal (RHR) boundary valves and ensure injection of water into the reactor vessel, as described in the current NMP2 TS Bases. The low pressure ECCS and associated Diesel generators (DGs) are initiated at Level 1 and certain RHR valves are closed at Level 3 to ensure that core spray and flooding functions are available to prevent or minimize fuel damage. Certain RHR valves are closed upon receipt of the Drywell Pressure - High (Boundary Isolation) Function in order to minimize the possibility of fuel damage. The applicability of these Functions is modified and modes 4 and 5 are removed to align with the intent of the TSTF. The TSTF-542 Functions 1.a and 1.b align to NMP2 Functions 1.b and 1.c, respectively.
  - The TSTF-542 Function 1.c. LPCI Pump A Start - Time Delay Relay aligns with the NMP2 Function 1.f, and is clarified as (Normal Power). The existing Functions 1.e. LPCS Pump Start - Time Delay Relay (Normal Power), 1.g. LPCS Pump Start - Time Delay Relay (Emergency Power) and 1.h. LPCI Pump A Start - Time Delay Relay (Emergency Power) are retained to accommodate existing NMP2 instrumentation. The Pump Start - Time Delay Relays (Normal and Emergency Power) are assumed to be operable in the accident and transient analyses requiring ECCS initiation. The applicability of these Functions is modified and Modes 4 and 5 are removed to align with the intent of the TSTF.
  - The TSTF-542 Function 1.d. Reactor Steam Dome Pressure - Low (Injection Permissive) is modified to align with the NMP2 instrumentation for Injection Permissive using 1.i. LPCS Differential Pressure - Low (Injection Permissive) and 1.j. LPCI A and LPCS Differential Pressure - Low (Injection Permissive). Low differential pressure signals across the injection valves are used as permissives for the low pressure ECCS subsystems. This ensures that, prior to opening the injection valves of the low pressure ECCS subsystems, the reactor pressure has fallen to a value below these subsystems maximum design pressure. The applicability of these Functions is modified and Modes 4 and 5 are removed to align with the intent of the TSTF.
  - The remaining TSTF-542 Functions 1.e through 1.g align to NMP2 Functions 1.k through 1.m.
- 3e • Table 3.3.5.1-1 Function 2. LPCI B and LPCI C Subsystems:
- The ECCS Instrumentation for NMP2 includes additional Functions 2.a. Reactor Vessel Water Level-Low, Level 3, and 2.d. Drywell Pressure-High (Boundary Isolation), to isolate RHR boundary valves and ensure injection of water into the reactor vessel, as described in the current NMP2 TS Bases. The low pressure ECCS and associated DGs are initiated at Level 1 and certain RHR valves are closed at Level 3 to ensure that core spray and flooding functions are available to prevent or minimize fuel damage. Certain RHR valves are closed upon receipt of the Drywell Pressure - High (Boundary Isolation) Function in order to minimize

the possibility of fuel damage. The applicability of these Functions is modified and modes 4 and 5 are removed to align with the intent of the TSTF. The TSTF-542 Functions 2.a and 2.b align to NMP2 Functions 2.b and 2.c, respectively.

- The TSTF-542 Function 2.c. LPCI Pump B Start - Time Delay Relay aligns with the NMP2 Function 2.e, and is clarified as (Normal Power). The existing NMP2 Functions 2.f. LPCI Pump C Start - Time Delay Relay (Normal Power), 2.g. LPCI Pump B Start - Time Delay Relay (Emergency Power) and 2.h. LPCI Pump C Start - Time Delay Relay (Emergency Power) are retained to accommodate existing NMP2 Instrumentation. The Pump Start - Time Delay Relays (Normal and Emergency Power) are assumed to be Operable in the accident and transient analyses requiring ECCS initiation. The applicability of these Functions is modified and Modes 4 and 5 are removed to align with the intent of the TSTF.
- The TSTF-542 Function 2.d. Reactor Steam Dome Pressure - Low (Injection Permissive) is modified to align with the NMP2 instrumentation for Injection Permissive using 2.i, LPCI B and C Differential Pressure - Low (Injection Permissive). Low differential pressure signals across the injection valves are used as permissives for the low pressure ECCS subsystems. This ensures that, prior to opening the injection valves of the low pressure ECCS subsystems, the reactor pressure has fallen to a value below these subsystems maximum design pressure. The applicability of this Function is modified and modes 4 and 5 are removed to align with the intent of the TSTF. The REQUIRED CHANNELS PER FUNCTION is modified to be 1 per valve to align to the existing NMP2 circuitry requirements.
- The remaining TSTF-542 Functions 2.e and 2.f align to NMP2 Functions 2.j and 2.k.

3f • Table 3.3.5.1-1 Function 3. High Pressure Core Spray (HPCS) System:

- The NMP2 Functions 3.b. Drywell Pressure - High and 3.i. Manual Initiation are modified with a Note (d) which is being retained and relabeled as Note (b). This Note was approved in Amendment 160 (Reference 4).
- The TSTF-542 Function 3.d. Condensate Storage Tank (CST) Level - Low is modified to align with the NMP2 instrumentation for 3.d. Pump Suction Pressure-Low and 3.e. Pump Suction Pressure - Timer. Low pump suction pressure, which is an indication of low level in the CST, indicates the unavailability of an adequate supply of makeup water from this normal source. The applicability of these Functions is modified and Modes 4 and 5 are removed to align with the intent of the TSTF.
- The remaining TSTF-542 Functions 3.e through 3.h align to NMP2 Functions 3.f through 3.k, respectively.

3g • Table 3.3.5.1-1 Function 4. Automatic Depressurization System (ADS) Trip System A:

- The existing Function 4 was not modified for NMP2. NMP2 does not have a Drywell Pressure - High Function and does not have an ADS Bypass Timer for ADS. NMP2 does not contain the Notes for Function 4 and therefore the renumbering of the Notes was not required.

3h • Table 3.3.5.1-1 Function 5. ADS Trip System B:

- The existing Function 5 was not modified for NMP2. NMP2 does not have a Drywell Pressure - High Function and does not have an ADS Bypass Timer for ADS. The current NMP2 TS do not contain the Notes for Function 5 and, therefore, the renumbering of the Notes was not required.

4 The new TS Section 3.3.5.2 is modified to accommodate the existing NMP2 instrumentation configuration, similar to the changes in TS Section 3.3.5.1 above. The following changes have no effect on the adoption of the TSTF-542 and are an acceptable variation:

4a • The Notes section preceding the Surveillance Requirements is clarified by adding a Note 2. This Note 2 is carried over from the current approved NMP2 TS from LCO 3.3.5.1 to align with the other changes in Section 3.3.5.2 created by implementing TSTF-542.

4b • Table 3.3.5.2-1 Function 1. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems:

- The TSTF-542 Function 1.a. Reactor Steam Dome Pressure - Low (Injection Permissive) is modified to align with the NMP2 instrumentation for Injection Permissive using 1.a. LPCS Differential Pressure - Low (Injection Permissive) and 1.b. LPCI A and LPCS Differential Pressure - Low (Injection Permissive).
- The remaining TSTF-542 Functions 1.b through 1.d align to NMP2 Functions 1.c through 1.e.

4c • Table 3.3.5.2-1 Function 2. LPCI B and LPCI C Subsystems:

- The TSTF-542 Function 2.a. Reactor Steam Dome Pressure - Low (Injection Permissive) is modified to align with the NMP2 instrumentation for Injection Permissive and is renamed 2.a, LPCI B and C Differential Pressure - Low (Injection Permissive).

4d • Table 3.3.5.2-1 Function 3. High Pressure Core Spray (HPCS) System:

- The TSTF-542 Function 3.b. Condensate Storage Tank Level-Low is renamed to Pump Suction Pressure-Low to align with the same instrumentation name used in Table 3.3.5.1-1, with the same justification.
- The NMP2 Functions for 3.c. HPCS Pump Discharge Pressure-High (Bypass) and 3.e. Manual Initiation are modified with a Note (d). This Note was approved in Amendment 160 (Reference 6).

5 The renumbered NMP2 TS Section 3.3.5.3 for RCIC System Instrumentation retains the two Notes in the Actions section, the existing Functions, and the existing wording of Note 2 prior to the Surveillances from the currently approved TS. This change has no effect on the adoption of the TSTF-542 and is an acceptable variation.

6 The NMP2 TS Section 3.3.6.1 is modified to accommodate the existing NMP2 instrumentation configuration and is aligned to the BWR/6 STS, without a setpoint control program. The following changes have no effect on the adoption of the TSTF-542 and are an acceptable variation:



6a • Table 3.3.6.1-1 Function 2. Primary Containment Isolation:

- NMP2 does not have a Function 2.g. Containment and Drywell Ventilation Exhaust Radiation - High and does not have the corresponding LCO Condition K. This change was not implemented and there are no changes to the current NMP2 Function 2.

6b • Table 3.3.6.1-1 Function 5. Shutdown Cooling System Isolation:

- The change to TSTF-542 Function 5.c for Reactor Vessel Water Level - Low Level 3 is made to the NMP2 Function 5.b due to numbering differences.

7 The NMP2 TS Section 3.3.6.2, Table 3.3.6.2-1, Function 4, is a different function for NMP2 due to a change in instrumentation. This change has no effect on the adoption of the TSTF-542 and is an acceptable variation.

8 The current NMP2 TS Section 3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring - Logic is being revised to remove OPDRVs from the Applicability of the LCO and from Condition F. This requirement differs from the Standard Technical Specifications on which TSTF-542 was based, but is encompassed in the TSTF-542 justification.

9 The revised Surveillance, SR 3.5.2.3.b is modified to clarify Condensate Storage Tank B because this is the suction source for High Pressure Core Spray. This clarification is in the current approved NMP2 TS. The change has no effect on the adoption of the TSTF-542 and is an acceptable variation.

10 The revised Surveillance, SR 3.5.2.6 is modified with a note to allow an ECCS pump that is already aligned for shutdown cooling to stay aligned and minimize the risk associated with realigning to minimum flow for 10 minutes and then manipulate the plant again to realign back to shutdown cooling mode. The change has no effect on the adoption of the TSTF-542 and is an acceptable variation.

### 3.0 REGULATORY ANALYSIS

#### 3.1 No Significant Hazards Consideration

Exelon requests adoption of TSTF-542 "Reactor Pressure Vessel Water Inventory Control," which is an approved change to the Standard Technical Specifications (STS), into the NMP2 Technical Specifications (TS). The proposed amendment replaces the existing requirements in the TS related to "operations with a potential for draining the reactor vessel" (OPDRVs) with new requirements on Reactor Pressure Vessel Inventory Control (RPV WIC) to protect Safety Limit 2.1.1.3. Safety Limit 2.1.1.3 requires reactor vessel water level to be greater than the top of active irradiated fuel.

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

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