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10 CFR 50.90

NMP1L3376

January 27, 2021

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: Supplemental Information to Support Review of Nine Mile Point Nuclear Station, Unit 1, License Amendment Request to Adopt TSTF-334, Revision 2

References:

1. Letter from D. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, License Amendment Request-Revise Technical Specifications to Apply TSTF-334, "Relaxed Surveillance Frequency for Excess Flow Check Valves," Revision 2, dated August 20, 2020
2. Email from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point, Unit 1-Request for Additional Information Concerning Review of License Amendment Request and Relief Request to Change Excess Flow Check Valve Testing Frequency)," dated December 30, 2020
3. Letter form D. Gudger (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 Adopt TSTF-334, Revision 2," dated January 22, 2021

By letter dated August 20, 2020 (Reference 1), Exelon Generation Company, LLC (Exelon) requested to change the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS). The proposed amendment request is to adopt Technical Specification Task Force (TSTF) Traveler 334, "Relaxed Surveillance Frequency for Excess Flow Check Valves Testing," Revision 2.

On December 30, 2020 (Reference 2), the U.S. Nuclear Regulatory Commission (NRC) provided a Request for Additional Information (RAI) identifying two areas where additional information was necessary to complete the review.

On January 22, 2021, Exelon submitted responses to the two RAIs (Reference 3). Upon receipt of the RAI responses, the NRC PM requested further clarification to RAI Question 2.

Attachment 1 to this letter contains Exelon's supplemental response to RAI Question 2. The supplemental response in Attachment 1 supersedes, in its entirety, the previous response to RAI Question 2 submitted in Reference 3.

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 Ron Reynolds at 610-765-5247.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 27th day of January 2021.

Respectfully,

David T. Gudger

David T. Gudger
Senior Manager - Licensing
Exelon Generation Company, LLC

Attachment 1: Supplemental Information

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

Supplemental Information

RAI 2:

In the LAR, the licensee stated, in part:

> The NMP1 Updated Final Safety Analysis Report (UFSAR) Section VI.D., 'Containment Isolation System,' describes that instrumentation lines penetrating containment from the reactor coolant pressure boundary (RCPB) are provided with valving outside the containment to facilitate testing and maintenance. Additionally, an instrument-line flow check valve is located outside primary containment. Should an instrument line that forms part of the RCPB develop a leak of sufficient flow outside containment, the instrument-line flow check valve will close automatically.

Many of the instrument-line flow check valves are on instrument sensing lines that provide impulse signals to key reactor protection system functions, like safety related reactor water level, reactor pressure, or reactor recirculation system flow monitoring instrument channels that provide input to flow-based average power range monitor trips. It is possible that an instrument-line flow check valve on an instrument line serving one or more of these reactor protection system functions could fail shortly after being tested during the last surveillance interval, and is in a failed condition that restricts flow resulting in confusing or anomalous signals to the control room and reactor protection system functions. If the valve has failed to its "check" position, it could remain in a failed condition until the next surveillance testing which may not occur for up to 10 years. From the amendment request it is unclear how this type of failure will be detected and corrected in a timely fashion. In case of an accident the presence of a failed instrument-line flow check valve could result in a reactor protection function to be disabled.

The staff is reviewing the proposed change against the following Nine Mile Point 1 Principal Design Criteria:

> Criterion 15
>
> A reliable reactor protection system must be provided to automatically initiate appropriate action to prevent safety limits from being exceeded. Capability must be provided for testing functional operability of the system and for determining that no component or circuit failure has occurred. For instruments and control systems in vital areas where the potential consequences of failure require redundancy, the redundant channels must be independent and must be capable of being tested to determine that they remain independent. Sufficient redundancy must be provided that failure or removal from service of a single component or channel will not inhibit necessary safety action when required. These criteria should, where applicable, be satisfied by the instrumentation associated with containment closure and isolation systems, afterheat removal and core cooling systems, systems to prevent cold-slug accidents, and other vital systems, as well as the reactor nuclear and process safety system.

Criterion 17

The containment structure, including access openings and penetrations, must be designed and fabricated to accommodate or dissipate without failure the pressures and temperatures associated with the largest credible energy release including the effects of credible metal-water or other chemical reactions uninhibited by active quenching systems. If part of the primary coolant system is outside the primary reactor containment, appropriate safeguards must be provided for that part if necessary, to protect the health and safety of the public, in case of an accidental rupture in that part of the system. The appropriateness of safeguards such as isolation valves, additional containment, etc., will depend on environmental and population conditions surrounding the site.

Based on the requirement of Criterion 15, "A reliable reactor protection system must be provided to automatically initiate appropriate action to prevent safety limits from being exceeded." Criterion 15 also states that capability must be provided for testing functional operability of the system and for determining that no component (such as an instrument-line flow check valve) or circuit failure has occurred. Prior to implementing TSTF-334, functional operability of the reactor protection system, inclusive of the instrument-line flow check valves, was verified by the Nine Mile Point Unit 1 staff at least once per refueling outage (approximately once every two years). After the proposed implementation of TSTF-334, it is possible that functional operability of reactor protection system functions that rely on instruments connected to impulse lines with instrument-line flow check valves will not be verified for up to ten years. The failure of an instrument-line flow check valve could result in the occurrence of confusing or anomalous reactor protection system functions and indications.

Please describe the Nine Mile Point Unit 1 capabilities and planned actions for detecting, identifying, and taking timely corrective actions to restore reliability of the reactor protection system functions (or to achieve any required reactor protection system functions) in the event of a failure of an instrument-line flow check valve that occurs in between functional tests of the valve.

Exelon Supplemental Response to RAI 2

The following response supersedes, in its entirety, the previous response to RAI Question 2 submitted in letter from Exelon to the NRC dated January 22, 2021.

During normal plant operation, NMP1 performs shiftly or daily checks to verify the operability of Reactor Protection System (RPS) instruments in accordance with Technical Specification (TS) Surveillance Requirement (SR) sensor checks. The procedures are structured such that the RPS channels for each parameter are compared to assure that the maximum channel-to-channel deviation is within acceptable guide values. This check verifies the operational status of the excess flow check valve and manual valves during operating conditions. Should any of the three valves in the standard instrument line configuration be closed, a deviation outside the guide value would be detected during the operating cycle and indicate a potential operability issue which would then be entered into CAP. CAP would then be used to document operability with the affected instruments, any needed compensatory actions and TS required actions.

The flow-biased reactor power trip channel, which receives input from flow sensors connected to the reactor recirculation lines, is also checked daily to detect potential operability concerns.

Although not required by the TS, this check is procedurally controlled. Other reactor pressure and reactor steam dome pressure instruments servicing protection functions are also not covered by TS related sensor checks. These instruments are however attached to instrument lines that are also used for other protective functions that are specifically covered by TS sensor check SRs.

The use of frequent sensor checks of RPS instruments as identified in the NMP1 TS provides a measure for identifying degradation in the protection system functions that compensate for a reduction in surveillance frequency of the instrument-line excess flow check valves.