

Draft RAI B.2.3.16-1, Fire Protection System Enhancements, for Turkey Point SLRA

Regulatory Basis: Title 10 of the *Code of Federal Regulation* (10 CFR) Section 54.21(a)(3) of requires an applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. One of the findings that the staff must make to issue a renewed license (10 CFR Section 54.29(a)) is that actions have been identified and have been or will be taken with respect to the managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR Section 54.21, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis (CLB). In order to complete its review and enable making a finding under 10 CFR Section 54.29(a), the staff requires additional information in regard to the matters described below.

Background

Subsequent License Renewal Application (SLRA) Section B.2.3.16 cites an enhancement to the Fire Water System Program as follows

Update AMP [aging management program] inspection/testing procedure(s) and develop new procedures to state that testing and visual inspections are performed in accordance with [GALL-SLR Report AMP] Table XI.M27-1 from NUREG-2191 [Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report]. This table, "Fire Water System Inspection and Testing Recommendations," is based on NFPA [National Fire Protection Association] 25 [*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*] (Reference B.3.131), 2011 edition. Unless recommended otherwise, external visual inspections are to be conducted on an RFO [refueling outage] interval.

The program basis document, reviewed during the in-office audit, cites a list of procedures and corresponding Table XI.M27-1 tests or inspections. It does not provide a description of the required changes, nor does SLRA Section B.2.3.16.

SLRA Section B.2.3.16, Enhancement No. 4 states, "[update inspection/testing procedures] to state that testing and visual inspections are performed in accordance with Table XI.M27-1..."

Issue

Enhancement No. 4, along with the additional information provided in the program basis document, lacks sufficient detail for the staff to have reasonable assurance that all plant-specific procedure change actions will be identified in relation to fire water system inspection and test procedures conducted during the subsequent period of extended operation. For example, Section 6.0, "Implementing Documents," in the program basis document states the following in relation to procedure changes associated with internal tank inspections:

Perform a fire water storage tank interior inspection every five years that includes inspections for signs of pitting, spalling, rot, waste material and debris, and aquatic growth. Also, revise existing procedures to perform a non-destructive examination to determine wall thickness whenever degradation is identified during internal tank inspections.

This description of changes to internal tank inspections lacks details related to other tests and inspections recommended in Table XI.M27-1 (NFPA 25 Section 9.2.7, “Tests During Interior Inspections,”) when signs of interior pitting, corrosion, or failure of coatings are detected during internal tank inspections. Examples include vacuum box testing and various coating inspections techniques that are beyond those recommended in AMP XI.M42, “Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks;” however, recommended in AMP XI.M27, “Fire Water System.”

Some inspections cited in Table XI.M27-1 utilize techniques other than visual methods (e.g., NFPA 25, “Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems,” Section 9.2.7 (3) ultrasonic thickness measurements of fire water storage tank bottoms). Flushes are recommended in addition to tests and visual inspections.

Request

1. For existing procedures that need to be updated, provide a description of the specific changes necessary for the fire water system inspections and tests to be consistent with GALL-SLR Report AMP XI.M27 Table XI.M27-1. Alternatively, state and justify any exceptions that are deemed necessary.
2. For new procedures that need to be developed (i.e., sprinkler testing, water storage tank inspections, main drain tests, obstruction inspections), provide a summary of the changes sufficient to demonstrate that the procedure will be consistent with the inspections and tests described in XI.M27 Table XI.M27-1. For example, see Enhancement No. 8 related to bottom surface inspections of tanks. Alternatively, state and justify any exceptions that are deemed necessary.
3. State the basis for why Enhancement No. 4 states that only changes to tests and visual inspections will be consistent with Table XI.M27-1.