

NRR-DMPSPeM Resource

From: Wentzel, Michael
Sent: Friday, May 4, 2018 11:15 AM
To: Hanek, Olga
Cc: Hess, Robert; Mack, Jarrett
Subject: Draft Request for Additional Information - Turkey Point 3 and 4 LAR 235 (EPID L-2017-LLA-0425)

Olga,

By letter dated December 21, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17355A184), Florida Power & Light Company (FPL, the licensee) submitted License Amendment Request (LAR) No. 235 for Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point). The proposed amendments would revise the Technical Specifications (TS) pertaining to the Engineered Safety Features Actuation System (ESFAS) instrumentation to resolve non-conservative actions associated with the Containment ventilation isolation and the Control Room ventilation isolation functions. In addition, the amendments would revise the Control Room ventilation isolation function to no longer credit Containment radiation monitoring instrumentation, eliminate redundant radiation monitoring instrumentation requirements, eliminate select core alterations applicability requirements, relocate radiation monitoring and Reactor Coolant System leakage detection requirements within the TS to align with their respective functions, and relocate the Spent Fuel Pool area monitoring requirements to licensee-controlled documents.

The NRC's Radiation Protection and Consequences Branch (ARCB) staff reviewed the application and identified areas where it needs additional information to support its review. The draft request for additional information (RAI) is provided below.

Please let me know by May 11, 2018, if a clarification call is needed and if the draft RAI contains any proprietary information. If a clarification call is not needed, please let me know if FPL can respond to the RAI by June 11, 2018.

Regulatory Analysis Basis

1. Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 Section 50.67, "Accident Source Term," allows licensees seeking to revise their current accident source term in design basis radiological consequence analyses to apply for a license amendment under § 50.90. The application shall contain an evaluation of the consequences of applicable design basis accidents previously analyzed in the safety analysis report. Section 50.67(b)(2) requires that the licensee's analysis demonstrates with reasonable assurance that:
 - (i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).
 - (ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) TEDE.
 - (iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) TEDE for the duration of the accident.
2. NUREG-0800, Standard Review Plan (SRP) Section 15.0.1, "Radiological Consequences Analyses Using Alternative Source Terms," Revision 0, July 2000.

3. NRC Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000 (ADAMS Accession No. ML003716792).

ARCB-RAI-1 (LOCA)

The proposed change deletes functional unit 9.c, "Containment Radioactivity - High," from TS Tables 3.3-2, 3.3-3 and 4.3-2. The NRC staff's review of radiological consequences for the design basis accidents in the Updated Final Safety Analysis Report (UFSAR) determined the loss of coolant accident (LOCA), fuel handling accident (FHA) and rod cluster control assembly (RCCA) ejection accident credit functional unit 9.c to isolate the normal mode of control room emergency ventilation system (CREVS) and establish the recirculation mode. In regards to the LOCA analysis, the licensee determined that the radiological consequence analysis did not need to be reanalyzed because the safety injection signal will provide a containment ventilation and control room isolation signal within the same time as that assumed in the current analysis of record as reflected in Turkey Point's UFSAR; therefore, there is no impact on the LOCA radiological consequences. However, it is not clear to the NRC staff why the timing is the same given the instrumentation differences. Therefore, explain why the timing for the control room isolation signal remains 30 seconds which accounts for the time to reach the signal, the diesel generator start time, load sequencing and damper actuation and positioning time, given the differences between the safety injection instrumentation and the containment radioactivity instrumentation.

ARCB-RAI-2 (RCCA ejection)

The proposed change deletes functional unit 9.c from TS Tables 3.3-2, 3.3-3 and 4.3-2. The NRC staff's review of radiological consequences for the design basis accidents determined the LOCA, FHA and RCCA ejection accident credit functional unit 9.c to isolate the normal mode of CREVS and establish the recirculation mode. In regards to the RCCA ejection accident analysis, Attachment 3, Section 2.1.2, "RCCA Ejection – Containment Release Event Analysis," states:

For the new Containment Release cases, the Control Room is isolated on a high radiation reading at the CR [control room] normal intake monitors. A 60 second delay is applied to account for the time to reach the setpoint (30 seconds), signal processing, and damper closure time for the automatic CR isolation case. Previously the isolation conservatively assumed 60 seconds.

In addition, UFSAR Section 14.2.6.4, "Dose Evaluation," states that for the containment release, the control room isolation occurs on high radiation on the containment radiation monitors and a 60 second delay time is conservatively applied to this release model. However, UFSAR Table 14.2.6-3, "Assumptions used for Rod Ejection Accident dose analysis," states that the time of the control room isolation for the containment release is 30 seconds on a high containment radiation signal.

It is not clear to the NRC staff which time is correct and why the timing is the same given the instrumentation differences. Therefore, explain which delay time is correct and then explain why the timing for the control room isolation signal remains 60 seconds which accounts for the time to reach the setpoint (30 seconds), signal processing, and damper closure time, given the differences between the control room normal intake instrumentation and the containment radioactivity instrumentation.

ARCB-RAI-3 (RCCA Ejection & FHA)

In accordance with SRP 15.0.1 Section III.6.c, the NRC staff performed an independent calculation to confirm the resultant radiological doses from the methods and assumptions presented in the license amendment request. However, the NRC staff's resultant radiological doses differ from the licensee's results such that they must be resolved in order for the NRC staff to conclude that the analyses are acceptable. Therefore, submit the following analyses described in Attachment 3 to the license amendment request for the NRC staff's review:

- RCCA ejection accident with the reduced source term and a 30 minute manual isolation of the control room ventilation system which resulted in 4.43 rem to the control room operators.

- FHA in containment with the reduced source term and a 30 minute manual isolation of the control room ventilation system which resulted in 1.75 rem to the control room operators.
- FHA in containment with the automatic isolation of the control room ventilation system which resulted in 1.44 rem to the control room operators.

In addition, discuss any correction factors, correlations, or modifications applied to the resultant dose obtained from the RADTRAD NAI code.

Hearing Identifier: NRR_DMPS
Email Number: 375

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Subject: Draft Request for Additional Information - Turkey Point 3 and 4 LAR 235 (EPID L-2017-LLA-0425)
Sent Date: 5/4/2018 11:15:04 AM
Received Date: 5/4/2018 11:15:00 AM
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Post Office:

Files	Size	Date & Time
MESSAGE	7890	5/4/2018 11:15:00 AM

Options

Priority: Standard
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Expiration Date:
Recipients Received: