

NRR-PMDAPEm Resource

From: Paige, Jason
Sent: Tuesday, April 19, 2011 2:09 PM
To: Abbatiello, Tom
Cc: Abbott, Liz; Tiemann, Philip; Hoffman, Jack
Subject: Turkey Point EPU - Nuclear Performance and Code Review (SNPB) Request for Additional Information - Round 1.2 (Part 2)

Tom,

Below are requests for additional information (RAIs) regarding the Turkey Point Extended Power Uprate (EPU) license amendment request. On March 31, 2011, the Nuclear Regulatory Commission (NRC) staff and Florida Power & Light Company (FPL) held a public meeting to discuss draft RAIs generated from various NRC technical branches while reviewing the October 21, 2010, EPU application. During the meeting, the licensee asked the NRC staff if any RAIs would be generated in regards to the post loss-of-coolant accident (LOCA) boric acid precipitation evaluation. The licensee was aware of these type of RAIs asked from previous EPU applications reviewed by the NRC staff. As a result, the NRC staff generated RAIs in regards to the Turkey Point post-LOCA boric acid precipitation evaluation. On April 19, 2011, you stated that a call was not needed to discuss the draft RAIs sent to you via email. These RAIs are categorized as Round 1, Part 2 questions since these are the second set of RAIs issued by the NRC technical branch, SNPB and they are not follow-up questions to the first set of questions issued April 11, 2011. The below RAIs reflect the questions that were sent to you and agreed upon by FPL. FPL agreed upon providing its responses within 30 days of the date of this email. If you have any questions, feel free to contact me.

SNPB-1.2.1 Provide the following information for the Turkey Point nuclear steam supply system:

- a. Volume of the lower plenum, core and upper plenum below the bottom elevation of the hot leg, each identified separately. Also, provide heights of these regions and the hot leg diameter.
- b. Loop friction and geometry pressure losses from the core exit through the steam generators to the inlet nozzle of the reactor vessel. Also, provide the locked rotor reactor coolant pump (RCP) k-factor. Provide the mass flow rates, flow areas, k-factors, and coolant temperatures for the pressure losses provided (upper plenum, hot legs, steam generators (SGs), suction legs, RCPs, and discharge legs). Include the reduced SG flow areas due to plugged tubes. Provide the loss from each of the intact cold legs through the annulus to a single broken cold leg. Also, provide the equivalent loop resistance for the broken loop and separately for the intact loop.
- c. Capacity and boron concentration of the refueling water storage tank.
- d. Capacity of the condensate storage tank.
- e. Flushing flow rate at the time of switch to simultaneous injection.
- f. High Pressure Safety Injection (HPSI) runout flow rate.
- g. Capacities and boron concentrations for high concentrate boric storage acid tanks.
- h. Flow rate into the reactor coolant system (RCS) from the boric acid storage tanks.
- i. Time to empty the refueling water storage tank (all pumps operating).
- j. Minimum containment pressure.

- k. Sump boric acid concentration vs. time.
- l. Minimum refueling water storage tank temperature.
- m. Injection temperature vs. time from sump during recirculation.

SNPB-1.2.2 Provide the following elevation data:

- a. Bottom elevation of the suction leg horizontal leg piping, cold leg diameter.
- b. Top elevation of the cold leg at the reactor coolant pump discharge.
- c. Top elevation of the core (also height of core).
- d. Bottom elevation of the downcomer.

SNPB-1.2.3 Provide the limiting bottom and top skewed axial power shapes.

SNPB-1.2.4 Provide the mixing volume vs. time.

SNPB-1.2.5 Justification and description of the methodology used to compute the sump boric acid concentration vs. time.

Jason Paige, Turkey Point Project Manager
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Recipients:

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