

## NRR-PMDAPEm Resource

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**From:** Paige, Jason  
**Sent:** Thursday, April 28, 2011 2:17 PM  
**To:** Abbatiello, Tom  
**Cc:** Abbott, Liz; Tiemann, Philip; Hoffman, Jack  
**Subject:** Turkey Point Fuel Storage Criticality Analysis LAR - Requests for Additional Information

Tom,

By letter dated August 5, 2010, supplemented by letter dated February 22, 2011, Florida Power and Light Company (FPL, the licensee), provided a fuel storage criticality analysis license amendment request in order to support an extended power uprate at Turkey Point, Units 3 and 4. On the basis of the provided information, the Nuclear Regulatory Commission (NRC) staff has concluded that additional information is required for the NRC to determine that the licensee has acceptably demonstrated that the spent fuel pool will remain subcritical under all conditions. On April 21, 2011, the NRC staff and FPL discussed the draft requests for additional information (RAIs) to gain a common understanding of the questions. The below RAIs reflect the questions discussed during the April 21, 2011, call. 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.

1. On page 4 of the license amendment request, the licensee stated that, "Metamic inserts are installed into selected spent fuel pit rack cells and establish allowed spent fuel storage configurations based on assembly initial enrichment, burnup and post irradiation cooling times." Explain how it is determined which spent fuel pool rack cells receive Metamic inserts?
2. In the discussion of relative power determination, starting on page 4-7, the licensee determines several bounding values for  $P_{\text{assembly}}$ . What are these values measuring?
3. On page 4-11, the licensee calculates a delta  $k_{\text{eff}}$  penalty for 4 assemblies that are not bounded by the average relative power limit by equating a change in temperature to a change of delta  $k_{\text{eff}}$ . Explain how the change in temperature correlates to a delta  $k_{\text{eff}}$ .
4. On page 4-14, the licensee states that, "FPL will ensure that the average soluble boron concentration seen by each assembly is less than 1000 ppm." How will this soluble boron concentration be controlled?
5. On page 4-35, the licensee states that the boron dilution analysis has previously been performed that showed 500 ppm of soluble boron is acceptable. The NRC staff requests that you provide this analysis.
6. On pages 5-5 and 5-7, why are RCCAs modeled in the Region I fuel categories but not for Region II fuel categories, especially since the licensee states that the fuel for Region II would use Metamic inserts or RCCAs?
7. On page 5-45, the licensee states that, "the removal of an absorber insert from an already analyzed array is bounded by the misload because the incorrectly placed assembly will be more heavily burned than the analyzed misload case, therefore this accident is covered." The NRC staff requests that you provide more analysis/clarification on this statement.

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