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Regional Administrator, Region II  
Attn: James Moorman  
U. S. Nuclear Regulatory Commission  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, S. W., Suite 23T85  
Atlanta, GA 30303

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
FPL Comments for the 2005 Written and Operational NRC License Examination

The provisions of NUREG-1021, Operator Licensing Examiner Standards, Examiner Standards ES-402, Administering Initial Written Examinations, allow the opportunity for submittal of comments on the written portion of the License Examination to the NRC. This letter documents that Florida Power and Light (FPL) Company has no concerns or challenges related to the site-specific written examination administered at Turkey Point on July 15, 2005.

On the Operational portion of the examination, FPL requests NRC to consider comments regarding the Job Performance Measure (JPM) titled "Calculate Number of Gallons of Primary Water Required to Raise Power from 5% to 30%" administered during the week of August 1, 2005. FPL's concern is related to the intermediate step of the JPM that requires the candidate to determine the Integral Rod Worth (IRW) value for the reactivity balance calculation. Specifically, FPL is requesting NRC to consider changing this step of the JPM to either accept the values of IRW obtained for all three methods described in this letter or to change the step to non-critical as all three calculations resulted in an acceptable final value. The basis for this request is presented in an attachment to this letter.

Should there be any questions, please contact Gregory Laughlin at (305) 246-6274.

Very truly yours,

Terry Jones  
Vice President  
Turkey Point Nuclear Plant

SM

cc: James Moorman, Chief, Operator Licensing and Human Performance Branch, Region II, USNRC  
Chief Examiner, Region II, USNRC  
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## **Background**

During the weeks of July 18 and August 1, 2005, the NRC conducted examinations for License applicants at the Turkey Point Nuclear Plant. An administrative Job Performance Measure (JPM), titled "Calculate Number of Gallons of Primary Water Required to Raise Power from 5% to 30%" was included among the tests administered to the applicants.

While administering this JPM, it was noted that the applicants determined values of integral control rod worth 3 different ways. Several applicants selected values from the - Hot Zero Power (HZIP), No Xenon column, several selected values from the Hot Full Power (HFP), Equilibrium Xenon column, while others interpolated between the two values. The variation of using the HFP, Equilibrium Xenon was not anticipated by the JPM authors. The JPM standards were developed based on using the Hot Zero Power, No Xenon column or by the interpolation method between the two. Choosing rod worth from the HFP, Equilibrium Xenon column would result in differential rod worth values that were slightly different and outside the acceptable band from those included on the JPM answer key. It should be noted that even though the values on this intermediate step were outside the allowable band, the final ppm of boron was still correctly calculated within allowable limits.

## **Basis for the Request**

A subsequent evaluation of this condition revealed the following:

1. Plant procedures do not identify which column the rod worth values should be chosen from, leaving the user to pick from three acceptable options: 1) Use the Hot Zero Power (HZIP) column exclusively as anticipated by the answer key, 2) Interpolate between the HZIP and HFP columns as anticipated by the answer key, or 3) Use the HFP column exclusively which was not anticipated by the answer key.
2. The differences in the final outcome of all three options are minor. Using the HZIP column exclusively results in a final boron concentration ( $C_B$ ) of 653 ppm. Using the HFP column exclusively results in  $C_B$  equaling 654 ppm and the interpolate method results in 657 ppm. Note that all of these values (653, 654 and 657) are included in the approved answer key as acceptable values for final boron concentration.
3. A follow-up analysis was performed by the Turkey Point Reactor Engineering Staff. The following were concluded:
  - a. The interpolation between the no xenon and equilibrium xenon is the more correct answer.
  - b. When compared to the much larger inherent error sources of 1) Xenon changes occurring during the power ascent, 2) Boron concentration sampling and measurement inaccuracies, and 3) B10 depletion (ratio of B-10 to B-11 changes over core life as some neutron capture occurs) effects (affecting plant curve accuracy), the potential 4 ppm difference introduced as a result on column selection is negligible.

- c. The calculated difference in predicted boron concentration between 653 – 657 ppm falls within the accuracy of the reactivity balance calculations, given the fact that pertinent information was not made available to the candidate in order to more accurately perform this calculation. Plant procedures confirm the plant standards on accuracies within the reactivity balance:
- 0-OSP-040.16, Initial Criticality After Refueling and Nuclear Design Verification, specifies that when a maximum difference between three consecutive RCS samples is less than 10 ppm, then RCS sampling can be secured. Essentially confirming the accuracy of RCS sampling. This 10 ppm translates into 87 pcm.
  - 0-OSP-040.4, Estimated Critical Condition, requires three consecutive samples within 5 ppm to secure sampling and proceed with unit startup. This 5 ppm is equivalent to 43.5 pcm.

### **FPL Request**

Taking into consideration the lack of procedural guidance and based on the subsequent evaluation performed by the site engineering staff revealing the comparatively small differences in the three approaches, we are requesting that the intermediate step of the JPM that calculates the integral control rod worth be changed to either accept values for all three methods or be changed to non-critical steps since all three final values obtained during these steps resulted in an acceptable final boron concentration.

### **FPL Corrective Actions**

This condition was entered in FPL corrective action program. CR# 2005-22223 has been initiated to have the site staff evaluate the lack of procedural guidance and determine the appropriate resolution to ensure Operators have the correct procedural guidance available.