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AUG 1 4 2000

L-2000-168
10 CFR 50.55a

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: Turkey Point Unit 3
Docket No. 50-250
Response to NRC Request for Additional Information related to
Turkey Point Unit 3 Risk-Informed Inservice Inspection Program

By letters L-2000-010 and L-2000-140, dated January 19, 2000, and July 13, 2000, respectively, Florida Power and Light Company (FPL) requested to revise the Turkey Point Unit 3 ISI Program for Class 1 piping only, through the use of the Risk-Informed Inservice Inspection Program (RI-ISI) as an alternative to the current requirements of the ASME Boiler and Pressure Vessel Code Section XI, 1989 Edition, as required by 10 CFR 50.55a.

FPL received NRC Request for Additional Information (RAI) related to the above submittals by electronic mail dated July 5, 2000. FPL response to the NRC RAI related to Turkey Point Unit 3 Risk-Informed Inservice Inspection Program is provided in the Enclosure of this letter.

Should there be any questions concerning this submittal, please contact us.

Very truly yours,

DE Jernigan for

R. J. Hovey
Vice President
Turkey Point Plant

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Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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FPL response to NRC Request for Additional Information (RAI) related to Turkey Point Unit 3 Risk-Informed Inservice Inspection Program

FPL response to NRC Request for Additional Information received in two sets by electronic mail dated July 5, 2000, related to Turkey Point Unit 3 Risk-Informed Inservice Inspection (RI-ISI) Program is provided below:

- **Responses to NRC RAI in Set No. 1:**

- **NRC RAI No. 1:** Please provide the following information:

1) When does the current 10-year inspection interval start and end?

FPL Response: Turkey Point Unit 3 current 10-year inspection interval Start Date: 2/22/1994, End Date: 2/21/2004.

2) When does the current inspection period start and end?

FPL Response: Turkey Point Unit 3, current second inspection period Start Date: 2/22/1997, End Date: 2/21/2001.

3) What cumulative percentage of inspections have been completed for the current interval?

FPL Response: For the current second period interval 50% of ASME Section XI Examination category B-F, and 63% of Examination category B-J, inspections have been completed.

- **NRC RAI No. 2:** The implementation of a RI-ISI program for piping should be initiated at the start of a plant's 10-year inservice inspection interval consistent with the requirements of the ASME Code Section XI, Edition and Addenda committed to by the Owner in accordance with 10 CFR 50.55a. However the implementation, may begin at any point in an existing interval as long as the examinations are scheduled and distributed to be consistent with ASME XI requirements, e.g., the maximum examinations credited at the end of the three inspections intervals under Program B should be 34%, 67%, and 100%, respectively, etc.

It is our view that virtually it is a necessity that the programs for the RI-ISInspections (RI-ISIs) and for the balance of the inspections be on the same interval start and end dates. This can be accomplished by either implementing the RI-ISIs at the beginning of the interval or merging RI-ISIs into the program for the balance of the inspections if the RI-ISIs are to begin during an existing ISI interval. One reason for this view is that it eliminates the problem of having different Codes of record for the RI-ISIs and for the balance of the inspections. A potential problem with using two different interval start dates and hence two different Codes of record would be having two sets of repair/replacement rules depending

upon which program identified the need for repair (e.g., a weld inspection versus a pressure test).

In addition, with the change to a RI-ISI program the Code minimum and maximum percentages of examination per period still apply to the RI-ISIs. For example, if a licensee is interested in starting the RI-ISIs during the second period, either the RI-ISIs or the Code required inspections will have to satisfy the second period minimum/maximum percentages. The code required percentages would have already been satisfied for the first period.

Please describe your implementation plan with respect to the above discussion.

FPL Response:

As stated above, Turkey Point Unit 3 has completed the examinations scheduled for the second period of the third ten year interval with 50% and 63% of the Class 1 B-F and B-J welds, respectively. The population of B-F and B-J welds that will be included under the risk informed program will be subdivided into three periods, with the third period examinations of the new program scheduled to be performed to close out the current third ten year interval. The B-F and B-J welds that will be scheduled during the third period will include welds selected under the risk informed process and originally slated for examination under the current program that have not been examined during the first and second periods of the third ten-year interval. The maximum percentage that will be credited for the risk informed program during the third period will be 34% of the B-F and B-J risk informed population.

- **NRC RAI No. 3:** Will the RI-ISI program be updated every 10 years and submitted to the NRC consistent with the current ASME XI requirements?

  FPL Response: The risk informed ISI program for Class 1 piping will be updated and resubmitted in conjunction with the update to existing ISI program at the expiration of the current ten year interval and during periodic ten year updates.

- **NRC RAI No. 4:** Under what conditions will the RI-ISI program be resubmitted to the NRC before the end of any 10-year interval?

  FPL Response: Changes to the RI-ISI program, prior to the ten year interval, will be resubmitted following the guidance of WCAP-14572, A-Version. During the monitoring process, on a period basis, plant design changes, plant procedure changes, equipment performance changes, and examination results (flaws, or leaks) will be factored into the risk informed program, as appropriate. If these changes decrease the percentage of examinations required for the 10-year interval under the proposed RI-ISI program, the revised program would then be resubmitted to the NRC for review and approval.

- **Responses to NRC RAI in Set No. 2:**

- **NRC RAI No. 1:** The staff evaluation report on your IPE (dated October 15, 1992) noted that your transient event tree did not model the actuation of the high head safety injection (HHSI) to provide borated water to the primary as it cools below hot zero power following a MSLB. Have you addressed this concern, or does it not impact any sequences relevant to this relief request?

  FPL Response: The frequency of a Main Steam Line Break (MSLB) upstream of the Main Steam Isolation Valves (MSIVs) is approximately 1E-04 per year. Borated water to the RCS can be provided by either the High Head Safety Injection (HHSI) or the Chemical and Volume Control System (CVCS). HHSI will be automatically initiated by the drop in RCS pressure. If HHSI were to fail, CVCS could be used to provide borated water. The probability of failure of both HHSI and CVCS is on the order of 1E-04. If it is assumed that MSLB followed by failure of both HHSI and CVCS is a core damage sequence, the frequency of the sequence is on the order of 1E-08 per year. Considering the fact that no single break in the Class 1 piping fails both HHSI and CVCS, and that the probability of any Class 1 pipe break would be taken into account, the fact that the actuation of HHSI to provide borated water to the primary as it cools below hot zero power following a MSLB is not modeled will make little or no difference in the results of the RI-ISI analysis. As an example, the maximum Class 1 pipe segment failure probability over a period of 40 years of operation is on the order of 1E-02. The majority of Class 1 pipe segments have failure probabilities orders of magnitude less, and none fail HHSI and CVCS. The failure probability of such a pipe segment over a period of 24 hours concurrent with a MSLB is (1E-02)/[(40)(365)], or approximately 7E-07. The frequency of a MSLB followed by the pipe segment failure is approximately (1E-04/year)(7E-07) = 7E-11 per year, and this is only a core damage sequence if it is assumed that the pipe segment failure causes HHSI and CVCS to fail. Even if this frequency is multiplied by the total number of Class 1 pipe segments inside containment (201), the frequency is only 1.4E-08 per year.

  In summary, the current PSA model does not include the actuation of HHSI for MSLB. However, there is no impact on the sequences related to this relief request, because the above bounding estimate indicates a CDF of 1.4E-8/Yr for the scenario omitted, which is significantly lower than the total CDF of approximately 6.0E-5/Yr.

- **NRC RAI No. 2:** The staff evaluation report also noted that your IPE did not include operator action requirement for replenishing water supply sources for long term DHR. Have you addressed this concern, or does it not impact any sequences relevant to this relief request.

  FPL Response: The operator actions cited currently exist in the Turkey Point Emergency Operating Procedures, but were not explicitly included in the PRA because the depletion of the tanks would not occur until at least 18 hours into the scenario. The probability of the operators failing to cool down and depressurize the RCS such that use of HHSI and AFW continue to be required is very unlikely, and therefore should not impact the results of the RI-ISI analysis.

- **NRC RAI No. 5:** Section 3.3 of your submittal concluded that the safety related components inside containment were adequately protected and that therefore only direct effects were considered. Is any non-safety-related equipment inside containment credited in your IPE? The staff evaluation report on your IPE notes, however, that during your IPE you identified equipment inside containment that could be potentially affected by severe environments. Such equipment included certain MOVs required for hot-leg recirculation, containment sump level indications needed for switch over to recirculation, and containment coolers and sprays. Please explain this apparent discrepancy.

  FPL Response: MOVs inside containment and containment sump level instrumentation were conservatively modeled to be dependent on containment spray and containment cooling. The MOVs and the sump level instrumentation are designed to meet the most adverse accident conditions to which they may be subjected.

- **NRC RAI No. 6:** Is all your class 1 piping inside containment?

  FPL Response: All Turkey Point Unit 3 Class 1 piping is inside containment.