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AUG 22 2008

L-2008-181
10 CFR 50.55 (a)

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Fourth 10 Year Interval Inservice Inspection Program
Response to Request for Additional Information for
Risk Informed Inservice Inspection (RI-ISI) Relief Requests 3 and 4

By letters L-2007-204, and L-2007-205, dated December 17, 2007, Florida Power & Light (FPL) submitted Relief Requests 3 and 4 requesting approval to revise the Fourth 10-Year Interval Inservice Inspection Program (for Class 1 piping only) to continue the use of the Risk Informed Inservice Inspection (RI-ISI) Program as an alternative to the requirements of the ASME Boiler and Pressure Vessel Code Section XI, as required by 10 CFR 50.55a.

On July 31, 2008, the Nuclear Regulatory Commission (NRC) Staff requested additional information via electronic mail (TAC MD7740 and MD8875) to complete their review of the above referenced submittals.

The response to the request for additional information (RAI) is attached. The original submittals for Relief Requests 3 and 4 remain valid with the additional information provided herein.

If you have any questions, please contact Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

Sincerely,

Michael Kiley for Bill Jefferson

William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

SM

Attachment

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

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NRR

Response to Request for Additional Information

This attachment provides FPL's response to NRC's request for additional information (RAI), Reference 1, based on NRC's review of the Fourth 10-Year Inservice Inspection Risk Informed (RI-ISI) program Relief Requests 3 and 4, for Turkey Point Units 3 and 4, respectively (References 2 and 3). The response to RAI questions is consistent with the calculation methods used to calculate the risk associated for the Inservice Inspection (ISI) application as documented in References 4 and 5.

RAI Question # 1:

Development of a risk-informed ISI (RI-ISI) program requires estimating conditional core damage and conditional large early release probabilities (CCDPs and CLERPs respectively) from the baseline PRA. Please briefly describe how the CCDPs and CLERPs that are used in the RI-ISI calculations are generated.

FPL Response:

For RI-ISI application, the impact of pipe breaks was simulated in the fault tree model by defining surrogate basic events whose failures are representative of the effects of the failure of their corresponding pipe segments. If a pipe break does not result in an initiating event, the appropriate surrogate event(s) was (were) set to "TRUE" prior to each fault tree quantification to simulate failure of mitigating systems or functions due to such pipe break. If a pipe break resulted in an initiating event, the appropriate surrogate event(s) was (were) set to "TRUE" and the initiating event probability set to 1.0 prior to each fault tree quantification.

Setting of surrogate events to logical TRUE/FALSE or probability value was performed through use of flag files that are developed for each pipe segment, or segments having the same effect in terms of plant response. Evaluated Pipe segment(s) within the scope of this analysis was (were) grouped (in terms of postulated pipe breaks, possible consequences, and their impacts) into enumerated "cases" to be evaluated individually, and to easily identify associated scenarios and results. Each associated flag file developed for respective surrogate event(s) was pre-processed when defined as part of the quantification process. The calculations were performed using the EPRI Risk and Reliability (R&R) Workstation suite of codes with the FTREX, Version 1.1.0.2, quantification code. The truncation was set to 1E-11 per year for each quantification. Reported results and associated cut-sets produced by PRAQUANT/FTREX were not manipulated in any manner and produced values used unchanged in the calculation of CCDP and CLERP.

The Core Damage Frequency (CDF), Core Damage Probability (CDP), Large Early Release Frequency (LERF) and Large Early Release Probability (LERP) results were calculated using Revision 7 of the Turkey Point dual-unit model (Reference 6) and including the following model maintenance and update items identified during the calculation review process:

1. The initiating event frequencies for ISLOCAs were updated per Reference 7.

2. Discharge path failures for opposite-unit Refueling Water Storage Tank (RWST) injection were taken into account.

3. The power source for the Unit 3 steam supply Motor Operated Valve (MOV) to the A Auxiliary Feedwater (AFW) Pump, MOV-3-1403, was changed in the model to be 125VDC breaker 4D01-28 instead of the existing incorrect modeling of 125VDC breaker 3D01-28.

4. Missing mutually exclusive events for the high head safety injection to RCS cold leg MOV-3/4-843A/B common cause valve failures were added to keep the model from assuming these valves could both fail open and closed at the same time.

In the Turkey Point dual-unit baseline PSA model, the LOCA initiating event does not identify exactly which of the three Reactor Coolant System (RCS) loops is broken. Therefore, an equal failure probability (branching fraction) of 1/3 is assigned to each loop. For RI-ISI analysis, specific segments of pipe are analyzed for failure. If failure of a piping segment affects a particular RCS loop, then there is no longer an equal probability of RCS loop failure. A generic flag file is used to remove the equal loop failure probability of 1/3 assumed in the baseline model. A separate segment-specific flag file is then used to set the LOCA initiator and surrogate basic event failing the appropriate injection line to 1.0. This is important since failure of a particular loop impacts those unisolable piping segments connected to that loop including ECCS injection lines. Using a flag file with the baseline PSA model to calculate CCDP and CLERP associated with failure of a specific piping segment has been used since 1999 for RI-ISI analysis of both Turkey Point Unit 3 and Unit 4.

RAI Question # 2:

Has FPL modified or manipulated the cut-sets (or other equivalent logic model results) obtained from the baseline PRA model prior to calculating the CCDPs and CLERPs that are used to develop the RI-ISI program?

FPL Response:

Resultant cut-sets produced by PRAQUANT/FTREX quantification process were not modified or manipulated in any manner prior to calculating the CCDPs and CLERPs that were used to develop the RI-ISI program.

RAI Question # 3:

If the cut-sets are modified or manipulated, please describe the technical bases for the changes and explain why the changes were judged necessary.

FPL Response:

Not applicable.

RAI Question # 4:

If the cut-sets are modified or manipulated, please describe the reviews done on the technical bases for the changes, and the manipulations used to make the changes, to demonstrate that the changes are consistent with the ASME PRA standard and prior peer review results with respect to the PRA quality requirements needed to support RI-ISI.

FPL Response:

Not applicable.

References

1. Electronic mail dated 7/31/08 4:35 PM from Brenda Mozafari, USNRC, to Olga Hanek, Licensing Department Acting Manager, Turkey Point Nuclear Plant.
2. L-2007-204, "Relief Request No. 3 Risk-Informed Inservice Inspection Program", FPL (signed by William Jefferson, Jr.) to NRC, dated 12/17/07.
3. L-2007-205, "Relief Request No. 4 Risk-Informed Inservice Inspection Program", FPL (signed by William Jefferson, Jr.) to NRC, dated 12/17/07.
4. PTN-BFJR-99-007, "Risk-Informed ISI Calculations for Turkey Point, Unit 3", Rev. 5, M. Averett, 5/29/07.
5. PTN-4FJR-01-002, "Risk-Informed ISI Calculations for Turkey Point, Unit 4", Rev. 5, M. Averett, 5/29/07.
6. PTN-BFJR-00-001, "PTN PSA Model Update", Rev. 7, M.W. Averett, 07/05/2006.
7. PTN-BFJR-07-003, "Turkey Point ISLOCA Frequency Analysis Update", Rev. 0, G.M. Blinde, 5/15/07.