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SUBJECT: Provides response to RAI re GL 97-01, "Degradation of CRDM/
CEDM Nozzle & Other Vessel Closure Head Penetrations."

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L-99-026

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

Subject: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to Request for Additional Information
Regarding Generic Letter 97-01 Degradation of CRDM/CEDM
Nozzle and Other Vessel Closure Head Penetrations

By letter L-97-105, dated April 26, 1997, Florida Power & Light Company (FPL) submitted the Turkey Point Units 3 and 4 thirty-day response to Generic Letter (GL) 97-01, "Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Closure Head Penetrations." By letter L-97-156, dated July 27, 1997, FPL submitted its 120-day response to the GL for Turkey Point Units 3 and 4. By letter dated October 26, 1998, the NRC issued a request for additional information in order to complete their review. In accordance with the NRC request, the attachment to this letter provides the additional information requested.

Should there be any questions, please contact us.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

OIH

Attachment

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

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TURKEY POINT UNITS 3 AND 4
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING GENERIC LETTER 97-01

By letter dated October 26, 1998, the NRC sent Florida Power and Light (FPL) Company a Request for Additional Information (Ref. 1) regarding the Turkey Point Units 3 and 4 Generic Letter (GL) 97-01 response. In that request, the staff noted that other Westinghouse Owners Group (WOG) member utilities had been issued similar staff requests and encouraged FPL to address the questions in an integrated fashion as appropriate. FPL has participated with the WOG and the industry to formulate generic responses to the staff request. The Nuclear Energy Institute (NEI) submitted these generic responses under separate letter to the NRC's Mr. Gus C. Lainas on December 11, 1998 (Ref. 2).

This response provides the information relative to the Request for Additional Information to GL 97-01 for FPL's Turkey Point Units 3 and 4. The NRC questions have been repeated. The NEI generic responses are incorporated by reference into the responses below. Where FPL has specific information that supplements the NEI responses, it is provided below.

NRC Question 1

WEC and the WOG did not provide a description of the crack initiation and growth susceptibility model used for the assessment of WEC VHP nozzles in plants endorsing WCAP-14902, Revision 0. Provide a description of the crack initiation and growth susceptibility model used for assessment of the VHP nozzles at your plant.

FPL Response

FPL used the Dominion Engineering CIRSE model to assess vessel head penetration (VHP) nozzles at Turkey Point Units 3 and 4. That model is now identified as the EPRI RPV Head Nozzle PWSCC Predictive Model and a description is provided in Enclosure 6 of Reference 2.

NRC Question 2a

In WCAP-14902, Revision 0, WEC did not provide any conclusions as to what the probabilistic failure model would lead the WOG to conclude with respect to the assessment of primary water-stress corrosion cracking (PWSCC) in WEC-designed VHP nozzles. With respect to the probabilistic susceptibility model (e.g., probabilistic failure model) provided in WCAP-14902, Revision 0:

- a. Provide the susceptibility rankings of your plant as compiled from the crack initiation and growth analysis of the VHP nozzles for your plant to that compiled by the WOG member plants for which WCAP-14902 is applicable. Include the basis for establishing the rankings of your plant relative to the others.



FPL Response

The response to this question is contained in several enclosures of Reference 2, starting with Enclosure 2, entitled "Responses to Generic NRC Requests for Additional Information," particularly the response to question 4 therein. The response to question 4 also refers to Enclosure 1 of the NEI response (Reference 2), which contains a histogram of susceptibility rankings for all Pressurized Water Reactors (PWRs) including WOG member plants. The bases for these rankings are identified in Enclosure 1 and specifically Enclosure 6 for Turkey Point Units 3 and 4.

NRC Question 2b

Describe how the probabilistic failure (crack initiation and growth) model in use for the assessment of the VHP nozzles at your plant was benchmarked, and provide a list and discussion of the standards the model was bench-marked against.

FPL Response

The response to this question is contained in Enclosure 2, entitled "Responses to Generic NRC Requests for Additional Information," of the NEI response (Reference 2), particularly Response 2a to Question 2 therein.

NRC Question 2c

Provide additional information regarding how the probabilistic failure (crack initiation and growth) models for the assessment of the VHP nozzles at your plant will be refined to allow the input of plant-specific inspection data into the model's analysis methodology.

FPL Response

The response to this question is contained in Enclosure 2, entitled "Responses to Generic NRC Requests for Additional Information," of the NEI response (Reference 2), particularly response 3a to question 3 therein.

NRC Question 2d

Describe how the variability in the product forms, material specifications, and heat treatments used to fabricate each CRDM penetration nozzle at the WOG member utilities are addressed in the probabilistic crack initiation and growth models described or referenced in Topical Report No. WCAP-14902, Revision 0.

FPL Response

The response to this question is contained in Enclosure 2, entitled "Responses to Generic NRC Requests for Additional Information," of the NEI response (Reference 2), particularly response 1a to question 1 therein.

NRC Question 3

Table 1-2 in WCAP-14902, Revision 0, provides a summary of the key tasks in WEC's nozzle assessment program. The tables indicate that the tasks for (1) Evaluation of PWSCC Mitigation Methods, (2) Crack Growth Data and Testing, and (3) Crack Initiation Characterization Studies have not been completed and are still in progress. In light of the fact that the probabilistic susceptibility models appear to be dependent in part on PWSCC crack initiation and growth estimates, provide your best estimate when these tasks will be completed by WEC, and describe how these activities relate to and will be used to update the probabilistic susceptibility assessment of VHP nozzles at your plant.

FPL Response

The response to this question is contained in Enclosure 2, entitled "Responses to Generic NRC Requests for Additional Information," of the NEI response (Reference 2), particularly the response to question 5 therein.

NRC Question 4

In the Nuclear Energy Institute (NEI) letters of January 29 (Ref.1), and April 1, 1998 (Ref. 2), NEI indicated that inspection plans have been developed for the VHP nozzles at the Farley Unit 2 plant in the year 2002, and at the Diablo Canyon Unit 2 plant in the year 2001, respectively. The staff has noted that although you have decided to apply an alternate probabilistic susceptibility model to the assessment of the VHP nozzles at your plant(s), other WOG member licensees, including the Southern Nuclear Operating Company and the Pacific Gas and Electric Company, the respective licensees for the Farley units and Diablo Canyon units, have selected to apply the susceptibility model described in WCAP-14901, Revision 0, to the assessment of VHP nozzles at their plants. The WOG's proposal to inspect the CRDM penetration nozzles at Farley Unit 2 and Diablo Canyon Unit 2 appears to be based on a composite assessment of the VHP nozzles at all WOG member plants. Verify that such a composite ranking assessment has been applied to the evaluation of the VHP nozzles at your plant. If composite rankings of the VHP nozzles at WOG member plants have been obtained from the composite results of the two models, justify why application of the alternate probabilistic susceptibility model being [used] for the assessment of VHP nozzles at your plant would yield the same comparable relative rankings as would application of the probabilistic susceptibility model used by the WOG member plants subscribing to the contents of WCAP-14901, Revision 0. Comment on the susceptibility rankings of the VHP nozzles at your plant relative to the susceptibility rankings of the VHP nozzles at the Farley Unit 2 and Diablo Canyon Unit 2 plants.

FPL Response

The announcement of inspection plans by individual WOG plants is the result of each individual plant's economic situation, along with their future operational plans. The individual plant results are all compared in the histogram in Enclosure 1 of Reference 2. An individual plant's category in the histogram is one of many considerations that must be evaluated in making inspection decisions.

REFERENCES

- 1 NRC Letter, "Generic Letter (GL) 97-01, "Degradation of CRDM/CEDM Nozzles and Other Vessel Closure Head Penetrations" Responses for Turkey Point Plant, Units 3 and 4 (TAC NOS. M98606 and M98607)," Letter from Kahtan N. Jabbour, NRC to T. F. Plunkett, FPL, October 26, 1998.
- 2 NEI Letter, "Responses to NRC Requests for Additional Information on Generic Letter 97-01, Project Number 689," David J. Modeen, NEI, to Gus C. Lainas, USNRC, December 11, 1998.