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September 25, 2001

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Mail Stop O5-E7
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: NRC Steam Generator Action Plan Item 2l, *Implications of New Degradation Mechanisms in SG Tubing*

PROJECT NUMBER: 689

Dear Dr. Sheron:

The industry response to Steam Generator Action Plan item 2l indicated that the EPRI Steam Generator Management Project (SGMP) would issue a letter providing guidance on the implications of new Steam Generator tubing degradation mechanisms. This letter is enclosed for your information.

The NEI Steam Generator Program Task Force is continuing to work with the staff in the resolution of all remaining action plan open items. If you have any questions on this matter please contact Jim Riley at (202) 739-8137 or jhr@nei.org.

Sincerely,

Alex Marion

JHR/maa
Enclosure

c: Mr. Jack R. Strosnider, Jr, U. S. Nuclear Regulatory Commission
Mr. Ted Sullivan, U. S. Nuclear Regulatory Commission
Mr. Emmett Murphy, U. S. Nuclear Regulatory Commission

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Enclosure 1

Interim Guidance: Action in Response to New Degradation Mechanisms

Pacific Gas and Electric Company

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August 31, 2001

To: Steam Generator Management Program (SGMP) Utility Steering Committees
PMMP Steering Committee
Senior Representatives
Technical Advisory Group (TAG)

From: Lawrence F. Womack
Chairman, Steam Generator Management Program

Subject: Steam Generator Management Program's Interim Guidance for Utility Action in Response to Finding New Steam Generator Degradation

References:
1. NRC Letter, Sheron, Brian W. to Collins, Samuel J., through Zimmerman, Roy P., "Steam Generator Action Plan," November 16, 2000
2. Letter, Lawrence F. Womack to Steam Generator Management Program (SGMP) Utility Steering Committees, "Information Letter Concerning Lessons Learned from a Review of Recent Steam Generator-Related Issues," September 29, 2000
3. EPRI Final report, TR-107621-R1, *Steam Generator Integrity Assessment Guidelines*, Revision 1, March 2000

Introduction

The purpose of this letter is to provide you with interim guidance on the issue of utility response to newly identified degradation in their PWR steam generators. The information presented below was developed under the auspices of the SGMP IIG and its supporting subcommittees in response to a request by the NEI Steam Generator Task Force for the SGMP to respond to NRC-identified, industry-related issues presented in Reference 1. Reference 1 addresses steam generator-related technical and programmatic issues that were developed by the NRC in their evaluation of the regulatory process associated with steam generator tube integrity. The resulting action plan to address these issues, as indicated in Reference 1, is a result of consolidating NRC activities including: 1) the NRC's review of the industry initiative related to steam generator tube integrity (i.e., NEI 97-06); 2) GSI-163 (Multiple Steam Generator Tube Leakage); 3) the NRC's Indian Point 2 (IP2) Lessons Learned Task Group recommendations; 4) the Office of the Inspector General report on the IP2 steam generator tube failure event; and 5) the differing professional opinion (DPO) on steam generator issues. The action plan item that is the subject of this letter deals with newly found steam generator degradation. This issue is involved to some degree in more than one action plan item, but for clarity purposes the interim guidance provided by this letter addresses the specific issue as documented in the attachment "IP2 Task Group Recommendations," Item 21, of Reference 1.

Reference 2 provides some additional guidance on the subject of this letter. Reference 2 was industry's initial response in addressing technical issues that were being raised during the investigation of the tube failure event at Indian Point 2. Additionally, most of the issues identified in the NRC's action plan are already addressed in the EPRI Guidelines referenced in NEI 97-06. Further industry review of the NRC's action plan, along with discussions with the NRC on the subject of newly found steam generator degradation, has resulted in the development of additional guidance on this subject. This guidance is provided below.

Discussion

During the NRC's review of the IP2 tube failure event, the staff concluded that the degradation mode of axial PWSCC at the apex of a low row U-Bend, which resulted in the steam generator tube leak, should be considered as a new type of degradation for IP2. In this context, the NRC staff's position is that when a new type of steam generator tube degradation occurs for the first time, licensees should determine the implications on steam generator condition monitoring and operational assessments. The industry has guidance on development and maintenance of a degradation assessment. This guidance includes requirements to identify the condition of the steam generators as defined by the last plant outage and to anticipate the condition at the upcoming outage. This process should include an assessment of potential new forms of degradation with consideration as to their likelihood of occurrence. Historical information from other utilities should be used in the evaluation of potential mechanisms. However, the guidance documents do not address the actions to be taken when an unexpected damage mechanism is identified.

Conclusion

Based on the above information, interim guidance is presented as follows. For newly identified degradation modes that were not considered to be potential degradation mechanisms in the degradation assessment, the licensee should enter the issue into their corrective action program at a significance level that requires a root cause analysis to be performed, i.e., a Significant Condition Adverse to Quality as defined by 10CFR50 Appendix B. The degradation assessment and inspection plan should be reviewed and revised as necessary to ensure that the necessary data is available to allow the operational assessment to address potential effects of the new degradation mechanism. Corrective actions to bound the extent of condition, such as requiring additional inspections prior to unit restart, may be a result of this review. When developing corrective actions, consideration should be given to the effects of plant chemistry, individual plant operating experience, and other causal factors. Degradation that was expected but not previously active, which was addressed in the plant-specific degradation assessment and inspection plan, does not need to be entered into the plant corrective action program.

This interim guidance will be reviewed by the cognizant SGMP guideline committee and incorporated, if required, in the next revision of Reference 3 and other guidelines where appropriate.

Sincerely,

Lawrence F. Womack
Chairman, Steam Generator Management Program

cc Jim Riley, NEI
Alex Marion, NEI
Jeff Ewin, INPO
Gary Fader, INPO