July 2, 2007

MEMORANDUM TO: Allen L. Hiser, Jr, Chief
Steam Generator Tube Integrity and
Chemical Engineering Branch
Division of Component Integrity
Office of Nuclear Reactor Regulation

FROM: John P. Burke, Materials Engineer ***/RA/***
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SUBJECT: SUMMARY OF THE MAY 2-3, 2007 PUBLIC MEETING WITH THE NUCLEAR ENERGY INSTITUTE (NEI) AND ELECTRIC POWER RESEARCH INSTITUTE (EPRI) TO DISCUSS STEAM GENERATOR ISSUES

The NEI Steam Generator Task Force (SGTF) met with Nuclear Regulatory Commission's (NRC) staff on May 2-3, 2007 at EPRI offices in Charlotte, N.C. The purpose of the meeting was to discuss steam generator technical issues, action items being addressed by the SGTF, and the industry's process for qualifying inspection techniques including a review of select Examination Technique Specification Sheets. The Enclosure provides a list of those in attendance. The SGTF presentation was noticed as a public meeting; however, no members of the public, other than industry representatives, were present.

Information presented by industry during the May 2nd morning session is available in the NRC Agencywide Documents Access and Management System (ADAMS) under Accession Number ML071430146. The remaining portion of the meeting was not open to the public.

The issues discussed during the public meeting were: Technical Specification Task Force (TSTF)-449 Tube Inspection Sampling Plans, Accident Induced Leakage Performance Criteria (AILPC) Bending Load Project Update, Tools for SG Integrity, and Technical Issue Tracking.

During the industry's presentation on tube inspection sampling plans, the NRC staff indicated that it was continuing to evaluate the appropriateness of various approaches for satisfying the technical specification sampling requirements.

With respect to the AILPC bending load project, the industry concluded that there have been no observed circumferential flaws that are both capable of leaking and located in high bending stress regions. It was also noted that low bending stresses can cause small increases in leak rates for circumferential flaws and therefore, must be addressed in leakage integrity evaluations.

The industry presented their assessment of several technical issues which the NRC staff identified in a letter to the Nuclear Energy Institute on June 8, 2006 (ML061590503). The staff had the following comments on the industry's presentation:

With respect to NRC issue 1 on site qualified techniques, the staff questioned the basis for evaluating the acceptability of operating a technique outside of its original qualification (e.g., outside the essential variable range) since it appears to be based primarily on engineering judgment rather than a rigorous demonstration based on flawed tube samples. In addition, the staff commented that the terminology used to describe a "qualified technique" is confusing (since there is no distinction in terminology between a technique which is qualified by a direct assessment of its capability to detect flaws and a technique which is operated outside its original qualification based on an indirect assessment of the effect of operating the technique outside its original qualification parameters).

With respect to NRC issue 2 on the possible increase in the leakage rate during a design basis accident (when compared to the leak rate observed during normal operation), the staff indicated that it would expect licensees to be able to explain their basis for concluding that they will continue to meet their accident induced leakage performance criteria in light of any operational leakage. The NRC staff indicated that there could be some value for a standardized industry approach for assessing the potential increase in leak rate when going from normal operating to design basis accident conditions.

With respect to NRC issue 4 on loose parts, the NRC staff questioned whether inspection techniques have been specifically qualified for wear indications located near the top of the tubesheet. Such wear would normally occur as a result of loose parts. This discussion focused on whether the mix of various bobbin frequencies (i.e., a turbo mix) is qualified to detect loose parts and any associated wear.

With respect to NRC issue 5 on divider plate cracking, the NRC staff indicated that to support permanent technical specification changes to restrict inspections within the tubesheet region for the Fall 2007 outages, plants would either need to develop an inspection program for the divider plate or would need to supply justification for why divider plate cracking would not be an issue for the remaining life of the facility. The staff's comments were based on several recent changes to the technical basis supporting these technical specification changes which basically resulted in removing most of the conservatism in the proposed inspection distance (as compared to the calculated inspection distance). Given the reduced conservatism in the proposed inspection distance and the calculated inspection distance, the staff believes a more detailed review of the models are necessary to support a permanent amendment which takes no analytical credit for the divider plate (and therefore would not require divider plate inspections for the purpose of determining tube inspection distances). The staff did not envision that such a detailed review of the models could be completed to support the Fall 2007 outages.

With respect to issue 8 on the corrective actions taken in response to the Indian Point 2 lessons learned, the NRC staff indicated that it was still reviewing the information provided by the industry but that no issues have currently been identified which would require industry action.

With respect to issue 10 on loads for assessing tube integrity, the NRC staff indicated that the issue really involves plants using different thermal hydraulic analysis to assess the loading conditions on the tubes for purposes of assessing the structural and leakage integrity of the tubes. The staff indicated that whereas it may be appropriate to use one

thermal hydraulic model for assessing leakage integrity (given the conservatism in the leakage and dose assessments), it may not be appropriate to use the same model for assessing the structural integrity of the tubes. In addition, the staff indicated that the thermal hydraulic analyses used should be consistent with the current NRC approved accident analyses.

With respect to issue 11 on the use of control data, the staff suggested that the SGTF should provide guidance to ensure utilities will recognize when possible issues are impacting the adequacy of the inspection (e.g., through the use of a "Judas" tube). One example that was given for being able to recognize when probability of detection may be an issue is to evaluate the inspection results between the primary and secondary analyst teams to determine if there are any significant differences. The resolution process takes care of each individual discrepancy but it may not recognize a larger generic issue with regard to performance (e.g. detection limits of a given technique).

Another issue discussed during the meeting involves clearly specifying which inspections are being performed for satisfying technical specification requirements (i.e., for degradation mechanisms that are occurring or have a high likelihood of occurring in the near term) and which inspections are performed as a result of a proactive sampling program (to ensure that degradation mechanisms that are not expected in the near term are not occurring). This distinction needs to be more clearly defined. The staff asked the SGTF to consider issuing interim guidance on this issue.

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DATE	7/2 /2007	6/27/2007	6/27/2007

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Attendance List

SGTF/Industry	NRC
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David Crawley, SNC	Allen Hiser
Russell Lieder, FP&L Seabrook	John Burke
James Benson, EPRI	Leslie Miller
Heather Feldman, EPRI	Emmett Murphy
Scott Redner, NMC	Ken Karwoski
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Thomas Bipes, Progress Energy	
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