

**AUDIT WORKSHEET**  
**GALL REPORT AMP**

PLANT: \_\_\_\_\_

LRA AMP: \_\_\_\_\_

REVIEWER: \_\_\_\_\_

GALL AMP: **XI.M19, Steam Generator Tube Integrity**

DATE: \_\_\_\_\_

Program Element	Auditable GALL Criteria	Documentation of Audit Finding
Program Description	A. The steam generator tube integrity program is applicable to managing the aging of steam generator tubes, plugs, sleeves and tube supports. See GALL Report XI.M19, Steam Generator Tube Integrity, for more information.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
1. Scope of Program	A. The scope of the program is specific to SG tubes, plugs, sleeves and tube supports. The program includes preventive measures to mitigate degradation related to corrosion phenomena, assessment of degradation mechanisms, inservice inspection (ISI) of steam generator tubes, plugs, sleeves, and tube supports to detect degradation, evaluation, and plugging or repair, as needed, and leakage monitoring to maintain the structural and leakage integrity of the pressure boundary.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment
“	B. Tube and sleeve inspection scope and frequency, plugging or repair, and leakage monitoring are in accordance with the plant technical specifications and the licensee’s SG degradation management program implemented in accordance with NEI 97-06.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
“	C. Plug inspection scope and frequency, plugging or repair, and leakage monitoring are in accordance with the licensee’s SG degradation management program implemented in accordance with NEI 97-06.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:

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“	D. Lastly, tube support plate inspection scope and frequency are in accordance with the licensee’s SG degradation management program implemented in accordance with NEI 97-06 as well as the program described in the licensee’s response to GL 97-06.	<p>Comment:</p> <p>Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No  Document(s) used to confirm Criteria:</p> <p>Comment:</p>
2. Preventive Actions	A. The program includes preventive measures to mitigate degradation related to corrosion phenomena. The guidelines in NEI 97-06 include foreign material exclusion as a means to inhibit wear degradation. The water chemistry program for PWRs relies on monitoring and control of reactor water chemistry based on the EPRI guidelines in TR-05714 for primary water chemistry and TR-102134 for secondary water chemistry. The program description and the evaluation and technical basis of monitoring and maintaining reactor water chemistry are presented in Chapter XI.M2, “Water Chemistry,” of this report.	<p>Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No  Document(s) used to confirm Criteria:</p> <p>Comment:</p>
3. Parameters Monitored/ Inspected	A. The inspection activities in the program detect flaws in tubing, plugs, sleeving, and degradation of tube supports needed to maintain tube integrity. Tubes are repaired or removed from service based on technical specification repair criteria. Sleeves are removed from service based on technical specification repair criteria. Degraded plugs and tube supports are evaluated for corrective actions.	<p>Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No  Document(s) used to confirm Criteria:</p> <p>Comment:</p>
4. Detection of Aging Effects	A. The inspection requirements in the technical specifications are intended to detect tube and sleeve degradation (i.e., aging effects), if they should occur. NEI 97-06 provides additional guidance on inspection programs to detect degradation of tubes, sleeves, plugs and tube supports. The intent of the inspection and repair criteria is to provide assurance of continued tube integrity between inspections. A licensee’s response to GL 97-06 also provides a description of plant-specific inspection programs for detection of degraded SG	<p>Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No  Document(s) used to confirm Criteria:</p> <p>Comment:</p>

Program Element	Auditable GALL Criteria	Documentation of Audit Finding
	internals.	
5. Monitoring and Trending	A. Condition monitoring assessments are performed to determine whether structural and accident leakage criteria have been satisfied. Operational assessments are performed after inspections to verify that structural and leakage integrity will be maintained for the operating interval between inspections, which is selected in accordance with the technical specifications and NEI 97-06 guidelines. Comparison of the results of the condition monitoring assessment with the predictions of the previous operational assessment provides feedback for evaluation of the adequacy of the operational assessment and additional insights that can be incorporated into the next operational assessment.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
6. Acceptance Criteria	A. Assessment of tube and sleeve integrity and plugging or repair criteria of flawed and sleeved tubes is in accordance with plant technical specifications. The criteria for plugging or repairing SG tubes and sleeves are based on NRC RG 1.121 or other criteria previously reviewed and approved by the staff and incorporated into plant technical specifications. Some examples of acceptance criteria that are applicable under certain circumstances include F*, L*, or NRC Generic Letter (GL) 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside-Diameter Stress-Corrosion Cracking."	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
7. Corrective Actions	A. Tubes and sleeves containing flaws that do not meet the acceptance criteria are plugged or repaired. Degraded plugs and tube supports are evaluated for corrective actions. As discussed in the appendix to this report, the staff finds the	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:

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	requirements of 10 CFR Part 50, Appendix B, acceptable to address the corrective actions.	Comment:
8. Confirmation Process	A. Site quality assurance (QA) procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of 10 CFR Part 50, Appendix B. As discussed in the appendix to this report, the staff finds the requirements of 10 CFR Part 50, Appendix B, acceptable to address the confirmation process and administrative controls.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
9. Administrative Controls	A. See Item 8, above.	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:
10. Operating Experience	A. Failures to detect some flaws, uncertainties in flaw sizing, inaccuracies in flaw locations, and the inability to detect some cracks at locations with dents have been reviewed in NRC Information Notice (IN) 97-88. Recent experience indicates the importance of performing a complete inspection by using appropriate techniques and components for the reliable detection of tube degradation and to provide assurance that new forms of degradation are detected. Implementation of the program provides reasonable assurance that SG tube integrity is maintained consistent with the plants' licensing basis for the period of extended operation. Experience with the condition monitoring and operational assessments required for plants that have implemented the alternate repair criteria in NRC GL 95-05 has shown that the predictions of the operational assessments have generally been consistent with the results of the subsequent condition monitoring assessments. In cases where discrepancies have been noted, adjustments have been made in the operational assessment models to improve agreement in subsequent assessments. In addition, the industry has programs/processes for incorporating lessons learned from	Consistent with GALL AMP: <input type="checkbox"/> Yes <input type="checkbox"/> No Document(s) used to confirm Criteria:  Comment:

Program Element	Auditable GALL Criteria	Documentation of Audit Finding
	plant operation into guidelines referenced in NEI 97-06.	

EXCEPTIONS

Item Number	Program Elements	LRA Exception Description	Basis for Accepting Exception	Documents Reviewed (Identifier, Para.# and/or Page #)
1.				
2.				
...				

ENHANCEMENTS

Item Number	Program Elements	LRA Enhancement Description	Basis for Accepting Enhancement	Documents Reviewed (Identifier, Para.# and/or Page #)
1.				
2.				
...				

DOCUMENT REVIEWED DURING AUDIT

Document Number	Identifier (number)	Title	Revision and/or Date
1.			
2.			
3.			
4.			
....			