

5.5 Programs and Manuals (continued)

5.5.9 Steam Generator (SG) Tube Surveillance Program

SG tube integrity shall be demonstrated by performance of the following augmented inservice inspection program.

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program test frequencies.

- a. SG Sample Selection and Inspection - SG tube integrity shall be determined during shutdown by selecting and inspecting at least the minimum number of SGs specified in Table 5.5.9-1.
- b. SG Tube Sample Selection and Inspection - The SG tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 5.5.9-2. The inservice inspection of SG tubes shall be performed at the frequencies specified in Specification 5.5.9.c and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.9.d. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all SGs; the tubes selected for these inspections shall be selected on a random basis except:
 1. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas;
 2. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each SG shall include:
 - a) All nonplugged tubes that previously had detectable wall penetrations (greater than 20%),
 - b) Tubes in those areas where experience has indicated potential problems,
 - c) A tube inspection (pursuant to Specification 5.5.9.d.1.h) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection,
 - d) Indications left in service as a result of application of the tube support plate voltage-based repair criteria shall be inspected by bobbin coil probe during all future refueling outages.
 - e) Tubes identified as W* tubes having a previously identified indication within the W* length shall be inspected using a rotating pancake coil (RPC) probe for the full length of the W* region during all future refueling outages. * **

(continued)

* Applicable for Units 1 and 2, Cycles 10, 11, 12, and 13 only.

** In-Situ Testing will be performed in accordance with PG&E letters DCL 98-148 dated October 22, 1998, and DCL 01-052 dated May 4, 2001, for Cycles 10 and 11 and letter DCL 01-095 dated September 13, 2001, for Cycles 12 and 13.

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- 2) This definition does not apply to the portion of the tube within the tubesheet below the W* length. Acceptable tube wall degradation within the W* length shall be defined as in 5.5.9.d.1.k. *
- g) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of a Double Design Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 5.5.9.c.3, above;
 - h) Tube Inspection means an inspection of the SG tube from the tube end (hot leg side) completely around the U-bend to the top support of the cold leg;
 - i) Preservice Inspection means an inspection of the full length of each tube in each SG performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed after the field hydrostatic test and prior to initial Power Operation using the equipment and techniques expected to be used during subsequent inservice inspections;
 - j) Tube Support Plate Plugging Limit is used for the disposition of an alloy 600 steam generator tube for continued service that is experiencing predominantly axially oriented outside diameter stress corrosion cracking confined within the thickness of the tube support plates. At tube support plate intersections, the plugging limit is based on maintaining steam generator tube serviceability as described below:
 - (i) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with bobbin voltages less than or equal to the lower voltage repair limit (NOTE 1), will be allowed to remain in service.
 - (ii) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than the lower voltage repair limit (NOTE 1), will be repaired or plugged, except as noted in 5.5.9.d.1.j (iii) below.
 - (iii) Steam generator tubes, with indication of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than the lower voltage repair limit (NOTE 1) but less than or equal to the upper voltage repair limit (NOTE 2), may remain in service if a rotating pancake coil inspection does not detect degradation. Steam generator tubes, with indications of outside diameter stress corrosion cracking degradation with a bobbin voltage greater than the upper voltage repair limit (NOTE 2) will be plugged or repaired.

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* Applicable for Units 1 and 2, Cycles 10, 11, 12, and 13 only.

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* Applicable for Units 1 and 2, Cycles 10, 11, 12, and 13 only.

5.6 Reporting Requirements (continued)

5.6.10 Steam Generator (SG) Tube Inspection Report

- e. (*) The results of the inspection of W* tubes shall be reported to the Commission pursuant to 10 CFR 50.4 within 90 days following return to service of the steam generators. This report shall include:
- 1) Identification of W* tubes.
 - 2) W* inspection distance measured with respect to the BWT or the top of the tubesheet, whichever is lower.
 - 3) Elevation and length of axial indications within the flexible W* distance and the angle of inclination of clearly skewed axial cracks (if applicable).
 - 4) The total steam line break leakage for the limiting steam generator per WCAP-14797.
- f. (*) The aggregate calculated steam line break leakage from application of all alternate repair criteria shall be reported to the Commission pursuant to 10 CFR 50.4 within 90 days following return to service of the steam generators.
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* Applicable for Units 1 and 2, Cycles 10, 11, 12, and 13 only.