

5.5 Programs and Manuals

5.5.7 Steam Generator (SG) Tube Surveillance Program (continued)

"Defect" means an imperfection of such severity that it exceeds the Plugging or Repair Limit, where applicable. A tube containing a defect is defective.

"F* distance" is the length of undegraded tube required to resist pullout. This distance is measured from the bottom of the upper hard roll transition toward the bottom of the tube sheet and has been conservatively determined to be 1.05 inches. The determination of F* Distance is satisfied by the mechanical tool (rolling pin) used to install the joint having an effective length of greater than or equal to 1.05 inches. The F* Distance is applicable only to tubes that are rerolled below the mid-plane of the tubesheet and have no degradation in the rerolled expansion joints. The F* Distance is not applicable to the original factory hard roll.

"F* tube" means a tube with indications below the F* distance greater than or equal to the Plugging or Repair Limit, and no indications within the F* distance.

"Imperfection" means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy current testing indications < 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

"Plugging or Repair Limit" means the imperfection depth at or beyond which the tube shall be repaired or removed from service by plugging because it may become unserviceable prior to the next inspection.

"Repaired Tube" means a tube that has undergone a process that re-establishes its serviceability. The sleeving process utilized shall be one of the following:

1. The Combustion Engineering welded sleeve process as described in Report CEN-331-P, Revision 1-P. See Note 1. The following sections of ABR/CE Report CEN-629-P, Revision 00, shall be implemented in conjunction with Report CEN-331-P, Revision 1-P:

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5.5.7 Steam Generator (SG) Tube Surveillance Program (continued)

Section 4.5.3 - Tube Brushing-Cleaning Equipment
Section 4.5.7 - Nondestructive Examination
Section 5.0 - Sleeve Examination Program
Section 9.3.1 - Cleaning Qualification

Note 1: Report CEN-331-P, Revision 1-P, shall be implemented in conjunction with the process enhancements cited in the letter from J.H. Mueller, Commonwealth Edison, to the NRC, dated September 18, 1996.

2. The Westinghouse Electric Corporation mechanical sleeve process as described in Report WCAP-11669.
3. The Bechtel-KWU Alliance welded sleeve process as described in Report BKAT-01-P, Revision 1.

"Sleeve Inspection" means an inspection of the sleeved portion of the tube. For a Combustion Engineering welded sleeve, this inspection will include the upper weld which forms the new pressure boundary and the sleeve material below the upper weld. For a Westinghouse Electric Corp. mechanical sleeve, this inspection will include the entire length of sleeve material. For a Bechtel-KWU Alliance welded sleeve, this inspection will include the upper weld which forms the new pressure boundary and the sleeve material below the upper weld.

"Tube Inspection" means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg. If a tube does not permit the passage of the eddy current inspection probe the entire length and through the U-bend; this shall be recorded and an adjacent tube shall be inspected.

"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 an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified above.

5.5.8 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. The program shall include:

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