

N20. Proceedings: Workshop On Primary Water Stress Corrosion Cracking

Key Points from EPRI NP-6719s-M:

- "Occurrence of PWSCC/Remedial Measures.
 1. Row 2 U-Bends are beginning to experience PWSCC. Many units are heat-treating both row 1 and row 2 bends to reduce residual stresses.
 2. All hot leg transitions in plants with full tubesheet depth roller expansion have been peened.
 3. For expansion transitions in tubes that require repairs, nickel plating (kiss sleeving) and conventional sleeving are being applied.
 4. PWSCC is now being detected in the cold leg expanded regions after only four cycles of operation. This cracking is about twice as rapid as expected, making the decision for cold leg peening more critical.
 5. Two domestic units with explosive expanded tubing have experienced PWSCC. The appropriate remedial measures need to be defined.
 6. A domestic unit performed trial stress relief heat treatment on support locations with relatively small dents that have initiated PWSCC."
- "Plugging Criteria. In France and Belgium, 14- to 15-mm long through-wall axial cracks are allowed to exist above the top of the tubesheet."
- "Nondestructive Evaluation Methods.
 1. French and Belgian inspection methods utilize rotating pancake coil (RPC) eddy-current techniques that are used for their crack length plugging criteria in the expansion zones.
 2. RPC methods have also been developed for inspection of tight radius U-bends.
 3. The likelihood of a forced outage has been reduced by using helium or florescent leak-test methods in European plants.
 4. Ultrasonic techniques have been developed to inspect conventional sleeves and nickel-plated roll transitions (kiss sleeves)."

EPRI report NP-6719-M summarizes the papers prepared for the workshop. Report NP-6719-SD contains all the papers and workshop presentations.

For more, see EPRI NP-6719-M, Proceedings, April 1990, 32 pages. EPRI NP-6719-SD, Proceedings, April 1990, 936 pages.