

**OHara, Timothy**

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**From:** OHara, Timothy *RT*  
**Sent:** Thursday, April 15, 2010 2:56 PM  
**To:** Cline, Leonard; Burritt, Arthur; Conte, Richard; Balian, Harry; Schroeder, Daniel  
**Subject:** RE: Update - Salem - AFW buried piping Issues

Len,

I added some comments in red below.

Tim

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**From:** Cline, Leonard *RT*  
**Sent:** Thursday, April 15, 2010 2:01 PM  
**To:** Burritt, Arthur; OHara, Timothy; Conte, Richard; Balian, Harry; Schroeder, Daniel  
**Subject:** RE: Update - Salem - AFW buried piping Issues

**Here is what I did with M. Brown's write-up - please review:**

**2) Update - Salem Unit 1 Outage – AFW (headers 12 and 14) buried piping Issues**

Based on UT results from the shallow section of the Unit 1 buried AFW piping for headers 12 and 14 (headers 11 and 13 are not buried), the licensee currently plans to replace a combined total of approximately 50' of piping on the shallow buried portion of these two headers (depth of approx 4 ft). The licensee is using a contractor to perform a finite element analysis to confirm the structural integrity of the rest of the shallow piping. These results will then be used to finalize the licensee's determination of past operability and to identify the need for additional corrective actions related to any extent of condition on the operating unit, Unit 2. The licensee has confirmed reasonable assurance of operability for the Unit 2 AFW system based on historical information and photographs from 1994 that provided indication of intact pipe coating and the fact that Unit 2 is a younger plant than Unit 1. The operability evaluation based on the finite element analysis is expected to be completed by Monday, 4/19. To facilitate completion of the operability determination the licensee will also be reducing the design pressure of the AFW piping from a very conservative 1900 psig down to a more realistic 1275 psig through a plant modification package.

On the deep section of piping for headers 12 and 14, the licensee has excavated a small portion of the down comer that leads to the deeper piping. They performed ultrasonic testing (UT) around the elbow at the top of this downcomer (depth of approx 4 ft), which was completely submerged in groundwater. The minimum wall thickness measured in this area was ~0.226", which was greater than the minimum required wall thickness of 0.20". In addition the licensee performed a guided wave pipe inspection on a portion of the straight run of the deep section of piping (approximately 20 ft in length at a depth of approx. 17 ft). The results indicated less wall thinning on this section of piping than the guided wave results indicated for the shallow section of piping. This portion of the piping (which has not been UT'd will not be covered in the FEA because only Guided Wave info is available. The licensee plans on showing structural integrity on the piping by performing a hydro on the complete #12 and #14 headers.

The licensee has confirmed that the deep section of AFW piping was coated similar to the shallow section of piping. Based on the results of the UT and the guided wave in the area of the deep section of piping, the licensee plans no further excavation of the deep section of piping. The licensee's current plans are to recoat all of the piping exposed during excavation that will not be replaced, in both the shallow and deep sections, and then following the completion of pipe replacements for the significantly degraded exposed pipe sections, hydro the entire line, both the shallow and deep sections.

The Region has an ISI inspector onsite as part of normal baseline inspection activities and he is reviewing the licensee's analysis. Additional resources from headquarters are assisting as needed. (Continue to follow forward to TRG Lead for Auxiliary Feedwater (S. Gardocki), Buried Piping POC (B. Hardies); assigned to Mike Brown)