

Caponiti, Kathleen

From: Hardies, Robert *MR*
Sent: Thursday, May 06, 2010 8:29 AM
To: Alley, David
Subject: RE: Salem AFW summary.doc

I don't want to just forward your comments, but can you engage with Harold and Richard about those two items?

Maybe you can just forward this, attach the summary, and delete any part of the email you want to delete before you press send:

Harold and Richard, We are making a one page chronology of the Salem event and would like you to look at our summary and verify that everything is correct. In particular, we would like you to modify the description of the absence or deterioration of the coating so that it appropriately reflects that the coating was either always absent or was degraded so much as to be no longer present. Second, it is not clear whether the piping system was originally over rated on a piping system that had a combination of pumps and valves that would not pressurize it above 1275 psi, or whether the licensee had to take administrative actions to limit the system pressure to remain below the new design rating of 1275 psi.

From: Alley, David *MR*
Sent: Thursday, May 06, 2010 8:19 AM
To: Hardies, Robert
Subject: RE: Salem AFW summary.doc

Bob,
We can finalize this Monday. A couple comments now.

Paragraph 1. My conversations with Rich Conte and Howard Gray indicated that the system had never been operated above 1275 as opposed to it could not be operated at greater pressure. If we really think it is important to distinguish, we will need to inquire further.

Item 2 of the "licensee did". I got two "quotes" from Rich and Howard. First was that inspections found "no evidence of coating". Second was applicant stated that corrosion was due to "absence or improper application of specified coating". I, too, heard conflicting stories initially about presence or absence of coating but at this point I don't have a problem with saying that visual inspections did not detect any coating.

Last item of "the licensee did". The licensee cut the pipe into something like 6' lengths. Harold looked at the end of each and is said that, based on what he saw, the pipe was structurally sound on the day it was removed from service. The region doesn't want to lose sight of the concept that the answer would likely have been different if the pipe had not been inspected for another 15 years. Once I mentioned the significance of the absence of coating and general corrosion as opposed to localized corrosion resulting from localized coating failure, Harold said that in one of the failures at Oyster creek, there had been a previous inspection of the pipe in which coating was removed to permit the inspection and then a different coating was reapplied prior to reburial. This reapplied coating failed completely. Although we should confirm this, it is my impression that this coating was applied to all 360 degrees of the pipe. Corrosion could, therefore, cause a complete severing of the pipe.

Anyway, more on Monday. Michele has the version upon which you did the editing. She is expecting more from us as we get it done. She has no one hounding here for this info.

Dave

From: Hardies, Robert
Sent: Thursday, May 06, 2010 7:47 AM
To: Alley, David
Subject: Salem AFW summary.doc

I made some comments and some changes, all of which require verification so that they everything is ultimately accurate.

Salem AFW piping

Salem excavated a portion of Unit 1 buried auxiliary feedwater piping. This is class 3 piping. Its designed operating pressure was listed as 1950 psi, however, the as installed system configuration could not pressurize the piping system actually operated at pressures not greater than to more than 1275 psi. The excavation was performed in conjunction with the licensee's buried piping program, which implemented requirements established in the license renewal process.

The licensee:

Excavated a single location along the pipe

Identified that the pipe visually appeared degraded and noted the apparent absence of any evidence of corrosion resistant coating (I heard conflicting stories about whether the coating had never been installed or had been installed in an inappropriate manner. As written the sentence implies the former.)

Installed a collar to conduct a guided wave exam; the failure of the collar to fit confirmed loss of material from the pipe

Performed guided wave exams; identified substantial loss of material at various locations

Excavated as indicated by guided wave; confirmed loss of material by UT

In an attempt to assess acceptability for continued service, excavated all but a section of piping that ran under the spent fuel building. Performed UT on all of the excavated pipe. Eventually found areas that needed to be replaced. Difficulties in evaluating the section of piping under the spent fuel building, combined with the need to replace portions of the excavated pipe, may have informed the licensee's eventual decision to replace piping.

Elected to replace all of the piping; some piping followed original route the remainder was rerouted

Did Licensee discovered that they had never performed the pressure testing required by paragraph IWA-5244 of Section XI of the ASME Code for the buried AFW piping

Conducted an operability analysis using a finite element analysis based on the actual max operating pressure (1275 psi) and remaining wall thickness data as determined by the UT measurements

Concluded that the piping had always been operable (NRC is currently reviewing the analysis and conclusion). This operability determination may provide information about

how close Salem was to experiencing a significant challenge to safety margins., which may inform NRC actions related to this incident.

Based on the results of the inspections at unit 1, the licensee conducted limited inspections (excavations) at unit 2. These excavations revealed that the coating used at unit 2 was different than that which may have been used at unit 1 and that the coating at unit 2 was not degraded. Based on these observations the licensee concluded that the piping at Unit 2 piping did not appear to be degraded. NRC is reviewing conclusion.