**Burritt, Arthur**

**From:** Burritt, Arthur
**Sent:** Thursday, April 29, 2010 10:59 AM
**To:** Ennis, Rick
**Subject:** FW: Salem AFW questions - Conf Call 4/28/2010 PM

FYI, more to follow

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**From:** Gray, Harold
**Sent:** Wednesday, April 28, 2010 5:24 PM
**To:** Conte, Richard
**Cc:** Burritt, Arthur; Modes, Michael
**Subject:** Salem AFW questions - Conf Call 4/28/2010 PM

During the HQ-RI conference call on 4/28 the following 4 questions were noted regarding the U1-U2 AFW missed buried piping IWA-5244 tests.

--For the U1 structural integrity evaluation what is the contribution of seismic induced stresses? This is to establish the magnitude of the seismic stresses in comparison to the pressure induced stresses. It is expected that the pressure induced stresses will be the dominant stress source.

--For the U1 finite element analysis, confirm that the area of compensation for the missing material at the deepest pit ( 0.077") was within the Code caculational requirements.

--For the AFW pipe coating done on U2 determine:
What coating was put on the pipe?
How long was the coating expected to be effective?

--Does the final Operability Evaluation for the U2 AFW buried piping adequately use the known condition of the U2 AFW pipe coating and the inputs from the U1 observations, measurements and analysis to confirm operability of U2 AFW until the IWA-5244 tests are done at the next U2 RFO.



C1123

## Burritt, Arthur

**From:** Burritt, Arthur RJ
**Sent:** Thursday, April 29, 2010 10:53 AM
**To:** Conte, Richard
**Subject:** FW: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

I could use some help answering the attached. I also received a call from Rick Ennis requesting DRS prepare a summary

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**From:** Lew, David RJ
**Sent:** Thursday, April 29, 2010 8:38 AM
**To:** Burritt, Arthur
**Subject:** FW: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

What was the followup to this email?

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**From:** Manoly, Kamal
**Sent:** Wednesday, April 28, 2010 2:15 PM
**To:** Tsao, John; Conte, Richard; Ennis, Rick; Burritt, Arthur; Cline, Leonard; Schroeder, Daniel; Balian, Harry; OHara, Timothy; Lupold, Timothy; Schulten, Carl; Elliott, Robert; Chernoff, Harold; Nelson, Robert; Giitter, Joseph; Howe, Allen; Honcharik, Michelle; Bowman, Eric; Miller, Barry; Schmidt, Wayne; Cahill, Christopher; Patnaik, Prakash
**Cc:** Lew, David; Clifford, James; Roberts, Darrell; Evans, Michele; Rosenberg, Stacey; Hiland, Patrick; Skeen, David
**Subject:** RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

I agree with all the points in John's email.

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**From:** Tsao, John NRW
**Sent:** Wednesday, April 28, 2010 8:31 AM
**To:** Conte, Richard; Ennis, Rick; Burritt, Arthur; Cline, Leonard; Schroeder, Daniel; Balian, Harry; OHara, Timothy; Lupold, Timothy; Manoly, Kamal; Schulten, Carl; Elliott, Robert; Chernoff, Harold; Nelson, Robert; Giitter, Joseph; Howe, Allen; Honcharik, Michelle; Bowman, Eric; Miller, Barry; Schmidt, Wayne; Cahill, Christopher; Patnaik, Prakash
**Cc:** Lew, David; Clifford, James; Roberts, Darrell; Evans, Michele; Rosenberg, Stacey
**Subject:** RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

In Rick's summary below, Items 5 and 7 discuss that the licensee needs to demonstrate the structural integrity of the buried AFW piping at Salem Unit 2.

Questions--

1.How can the licensee demonstrate the structural integrity of a buried pipe without performing a pressure test or NDE.

2.To demonstrate the structural integrity of a piping system, the licensee can perform a stress analysis which requires pipe wall thickness. How can the licensee verify the pipe wall thickness without actual measurements, giving the wall thinning issue in the unit 1 AFW pipe?

3.I understand that the licensee has measured pipe wall thickness at only one spot of the unit 2 AFW pipe and had performed some measurements in 1994? How many feet (or a percentage of the pipe length) of the

buried AFW pipe that need to be measured for wall thickness and verified for proper coating before we have a reasonable assurance of its structural integrity?

4.How can the NRC staff verify the validity of the licensee's stress analysis if we and they do not know the unit 2 AFW pipe wall thickness?

John

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**From:** Conte, Richard
**Sent:** Wednesday, April 28, 2010 7:32 AM
**To:** Ennis, Rick; Burritt, Arthur; Cline, Leonard; Schroeder, Daniel; Balian, Harry; OHara, Timothy; Lupold, Timothy; Tsao, John; Manoly, Kamal; Schulten, Carl; Elliott, Robert; Chernoff, Harold; Nelson, Robert; Giitter, Joseph; Howe, Allen; Honcharik, Michelle; Bowman, Eric; Miller, Barry; Schmidt, Wayne; Cahill, Christopher
**Cc:** Lew, David; Clifford, James; Roberts, Darrell
**Subject:** RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

nice summary Rick.

only comment is I believe the licensee is doing an operability on AFW - they haven't been told about the apparently wrong path they are on related to none use of TS 4.0.3 and need to go into the strutural integrity LCO.

expanding distibution to my management - Darrell was particularly interested in summarizing/documenting decision yesterday, very nice summary.

we are thinking of memorizing in a TIA, like Pilgrim, we also need to think generic implications

your email is a good discussion point for todays conference.

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**From:** Ennis, Rick
**Sent:** Wednesday, April 28, 2010 7:19 AM
**To:** Burritt, Arthur; Cline, Leonard; Schroeder, Daniel; Balian, Harry; Conte, Richard; OHara, Timothy; Lupold, Timothy; Tsao, John; Manoly, Kamal; Schulten, Carl; Elliott, Robert; Chernoff, Harold; Nelson, Robert; Giitter, Joseph; Howe, Allen; Honcharik, Michelle; Bowman, Eric; Miller, Barry; Schmidt, Wayne; Cahill, Christopher
**Subject:** Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

The following is a summary of the internal NRC call held on 4/27/10 to discuss issues associated with the Salem Unit 2 AFW piping. These issues were raised following licensee discovery of degradation of the Salem Unit 1 AFW buried piping and the subsequent extent of condition review.

1) The licensee has never performed the pressure testing required by paragraph IWA-5244 of Section XI of the ASME Code for the buried AFW piping. Technical Specification (TS) Surveillance Requirement (SR) 4.0.5 provides requirements regarding inservice inspection and inservice testing of ASME Code Class 1, 2, and 3 components. SR 4.0.5.d states that "[p]erformance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements." Therefore, the testing required by IWA-5244 is considered a TS surveillance requirement.

2) SR 4.0.3 allows a delay in the performance of a SR when it is discovered that a surveillance was not performed within its specified frequency (i.e., missed surveillance). PSEG is currently invoking the provisions of SR 4.0.3 to justify not performing the IWA-5244 testing for the AFW piping until the next outage.

3) A Pilgrim TIA dated 1/23/09 (ML083660174) states that "the NRC staff's position is that a missed SR is different than an SR that was never performed." Some of the key points in the TIA supporting this position are as follows:

a) Use of the word "frequency" [in SR 4.0.3] establishes an interval, a period of time, that includes an initial performance of the SR, and a specified time period to re-perform the SR thereafter, i.e., to repeat the surveillance.

b) SRs are performed at frequencies that are more often than the mean-time to failure of particular systems. Thus, most SRs confirm that SSCs are operable given an operable finding at the previous testing interval.

Based on the TIA, PSEG's use of SR 4.0.3 to justify a delay in performing a surveillance that never has been performed is contrary to the NRC staff's current interpretation on use of SR 4.0.3.

4) SR 4.0.1 states, in part, that "[f]ailure to perform a Surveillance within the specified frequency shall be failure to meet the Limiting Condition for Operation, except as provided in Specification 4.0.3. Since SR 4.0.3 is not applicable to surveillances that have never been performed, Salem Unit 2 does not meet LCO 3.4.11.1 which states "[t]he structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with Specification 4.4.11.1." Note, SR 4.4.11.1 references SR 4.0.5 as the surveillances required to demonstrate structural integrity of the ASME Code Class 1, 2 and 3 components. The AFW piping is Code Class 3. Action c in LCO 3.4.11.1 states that:

> With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.

The above Action Statement has no time limit.

5) The licensee is currently evaluating the structural integrity of the Salem Unit 2 AFW buried piping. If the licensee concludes that the structural integrity is acceptable, then Salem Unit 2 would no longer be in Action c of LCO 3.4.11.1 (i.e., structural integrity would be restored in accordance with Action c). If the licensee concludes that the structural integrity is not acceptable, they would need to isolate the affected components from service in accordance with Action c. Isolation of the affected AFW piping would put them in the Action b in LCO 3.7.1.2 for two inoperable AFW pumps. [Region I, please confirm number of AFW trains that would be inoperable] This would result in a plant shutdown.

6) Failure to perform the testing required by IWA-5244 is a violation of ASME XI. The licensee would not need to submit a relief request if they are planning to do the test the next outage.

7) The licensee believes that the Salem Unit 2 AFW buried piping is in better condition that the Unit 1 piping. Region I will continue to review the licensee's efforts on these issues. The NRC staff is not aware of any information at this point indicating a lack of structural integrity for the Salem Unit 2 AFW buried piping.

Please let me know if you have any corrections or clarifications needs to the above summary.

Thanks,

Rick