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Ennis, Rick

From: Bowman, Eric / NRR
Sent: Wednesday, April 28, 2010 1:34 PM
To: Ennis, Rick
Subject: RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

Rick,

I took a quick look at the amendment request and agree with you that SR 4.0.5 itself is the source for the requirement to demonstrate structural integrity. PSEG discusses the other SRs (4.4.10.1.1 and 4.4.11.1 for the different plants) as merely requiring an augmented inspection for the RCP flywheel rather than requiring the IST, ISI and augmented inspections for RCP flywheels. They seem to be correct in this discussion for Salem Unit 2, but probably off a bit for Unit 1.

The markup for Salem Unit 1 shows deletion of 4.4.10.1.1a, which specifically calls out as surveillance requirements the requirements of 4.0.5, deletion of 4.4.10.1b, which specifically calls out as surveillance requirements the augmented ISI in 4.4.10.1.2, and the note that added the requirement for the RCP flywheel inspection per the recommendations of RG 1.14.

For Unit 2, it doesn't look like there is a separate call out of the requirements of 4.0.5 as Surveillance Requirements under LCO 3.4.11; there's merely a reference to the 4.0.5 requirements. The problem is that while we could write a contrary to statement for Unit 1 (i.e., "contrary to the requirements of TS SR 4.4.10.1a that structural integrity of ASME Code Class 1, 2 and 3 components be demonstrated per the requirement of Specification 4.0.5, the licensee did not demonstrate the integrity ... per the requirements of 4.0.5"), we cannot for Unit 2. For that one we would start out "contrary to the requirements of TS SR 4.4.11.1 that in addition to the requirements of Specification 4.0.5, each RCP flywheel shall be inspected per the recommendations of ...," and end with "the licensee did not meet the requirements of Specification 4.0.5." This wouldn't really work since the requirements of 4.0.5 are not really incorporated into 4.4.11.1, but are instead referenced.

For the deletion of the reference to 4.0.5 from the Hope Creek TS, they don't even seem to consider this as being deletion of an SR.

Thanks!

Eric

From: Ennis, Rick NRR
Sent: Wednesday, April 28, 2010 12:30 PM
To: Bowman, Eric
Cc: Schulten, Carl; Elliott, Robert; McMurtray, Anthony; Tingen, Steve; McCoppin, Michael; Rosenberg, Stacey; Chernoff, Harold
Subject: RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

Eric,

I believe that SR 4.4.11.1 is calling out performance of the requirements of SR 4.0.5 to meet the LCO (i.e., separate from the RCP flywheel requirements).

C/115

PSEG currently has an amendment request dated 3/25/10 under review for Hope Creek and Salem 1 and 2 that would delete the structural integrity TSs from all 3 units (reference ML100920052). If you look at the slight differences in how each of the 3 plant TS are organized it seems pretty clear SR 4.0.5 (by itself) is used to demonstrate structural integrity. See the markup of the TS pages in the 3/25/10 application (including the associated bases pages).

Thanks,

Rick

From: Bowman, Eric
Sent: Wednesday, April 28, 2010 11:19 AM
To: Ennis, Rick
Cc: Schulten, Carl; Elliott, Robert; McMurtray, Anthony; Tingen, Steve; McCoppin, Michael; Rosenberg, Stacey
Subject: RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping

Rick,

I discussed this briefly with Carl Schulten and believe that we'll need to get together to figure out whether SR 4.0.3 is applicable to the testing the licensee did not perform in the first place. Strictly speaking, SR 4.4.11.1 might not call out the inservice testing requirements to demonstrate structural integrity of the ASME Code Class 1, 2 and 3 components. SR 4.4.11.1 reads:

> In addition to the requirements of Specification 4.0.5, each Reactor Coolant Pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1,August 1975. In lieu of Position C.4.b(l) and C.4.b(2), a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at 20 year intervals.

This could be read as acknowledging that Specification 4.0.5 contains requirements for inspection and testing of Reactor Coolant Pump flywheels, while imposing further requirements to meet the recommendations of RG 1.14. SR 4.4.11.1 does not seem to call out performance of the requirements of Specification 4.0.5 itself, instead leaving that to 4.0.5.

SR 4.0.5.c. specifically calls out the applicability of Specification 4.0.2, but there is no paragraph under 4.0.5 that calls out Specification 4.0.3. This appears to follow the GL 93-05 recommendation for making 4.0.2 applicable to 4.0.5 by inserting 4.0.5(c), which implies that the staff position at that time was that the 4.0.1 through 4.0.4 allowances and requirements were not otherwise applicable to 4.0.5.

I believe it would take a bit of further research to determine whether 4.0.3 is applicable, but I don't believe it is made applicable through SR 4.4.11.1.

Eric

From: Tsao, John NRR
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

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.

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

Received: from HQCLSTR01.nrc.gov ([148.184.44.79]) by TWMS01.nrc.gov
([148.184.200.145]) with mapi; Wed, 28 Apr 2010 13:36:05 -0400
Content-Type: application/ms-tnef; name="winmail.dat"
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From: "Bowman, Eric" <Eric.Bowman@nrc.gov>
To: "Ennis, Rick" <Rick.Ennis@nrc.gov>
Date: Wed, 28 Apr 2010 13:34:13 -0400
Subject: RE: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping
Thread-Topic: Summary of 4/27/10 Internal NRC Call on Salem Unit 2 AFW Piping
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