

OHara, Timothy

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From: OHara, Timothy *RT*  
Sent: Friday, April 09, 2010 6:28 PM  
To: Modes, Michael; Conte, Richard  
Subject: FW: AF Piping update  
Attachments: S1 Aux Feed Buried Piping sketch 2.pdf

Mike & Rich,

As usually happens, PSEG seems to be changing their approach on the pipe replacement. Today they told us that there were too many unknowns to proceed with an above ground redesign.

They are now going to excavate all of the present piping and UT it. They have engaged SIA to perform an FEA of the system, I believe as a prelude to telling us that they can continue to operate the present system. The attached file is what they are giving SIA as input to the FEA.

The email below from Len Rajkowski gives their new (today) Code approach. I'm going to need some help from someone on whether this is feasible and whether 10 CFR 50.55a accepts this.

Another concern is that they will, in all likelihood not be able to UT everything and will then attempt to use Guided Wave to determine wall thickness.

Mike, I'd like your opinion on what this sounds like and some guidance on who in NRR should review this approach.

Tim OHara

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**From:** Schroeder, Daniel L. [mailto:Daniel.Schroeder@pseg.com]  
**Sent:** Friday, April 09, 2010 12:09 PM  
**To:** OHara, Timothy  
**Subject:** FW: AF Piping update

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**From:** Rajkowski, Leonard J.  
**Sent:** Friday, April 09, 2010 10:46 AM  
**To:** Schroeder, Daniel L.  
**Cc:** Eilola Jr, Edwin; Fricker, Carl J.; Mattingly, William F.; Barnes, James M.  
**Subject:** AF Piping update

Dan,

**Today, 4/9/10, PSEG commences the complete excavation of AF buried piping between the FHB and the Outer Pen. We are also planning to excavate inside the Fuel Transfer Area. This will allow for a more complete UT of the affected piping, while also preparing for a possible replacement in-kind or modified buried arrangement.**

A **finite element** model is being developed, incorporating the irregular pipe section profile defined by the given ultrasonic thickness measurements (and adjusted for the defined future wear). The given pressure and axial loading will be applied to this model such that the resultant primary membrane and bending stresses in the pipe cross-section may be computed for design analysis.

### **ASME Code Section III Design Analysis**

As allowed in ASME Section III ND-3611.3 (2004 Edition, latest approved by the NRC), a more rigorous piping design analysis such as NB-3200 may be used to calculate stresses required to satisfy ND-3 600 requirements. Note that the calculated stresses must be compared to the allowable stresses in ND-3 600. Thus to show acceptance of the degraded piping with a non-uniform pipe wall, the design loadings will be determined using design by analysis methods in NB-3200 (see Task 2). Current ASME Code allowable stresses based on a factor of 3.5 on tensile strength will be used.

**Qualifications:** Structural Integrity (SI) will perform this work in accordance with the SI QA Program, which is in compliance with the requirements of 10CFR50, Appendix B, 10CFR21, and ANSI/ASME NQA-1-1989, 1994 and meets the intent of applicable portions of ANSIN45.2. The SI implementation of the QA Program has been audited and accepted by many nuclear utilities and clients. SI's Quality Assurance Program is controlled by SI's Quality Assurance Manual Revision 6, dated 12/20/2006 and is implemented in accordance with the applicable SI Quality Procedures.

Any questions, please call me,

**Leonard J Rajkowski**  
*Engineering Director*  
*Salem Generating Station*  
*(856) 339-5142*

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