

From: Paul Kaufman
To: TLO1@nrc.gov
Date: 11/15/2006 1:52:37 PM
Subject: Aging Management Program for Feedwater Nozzles -Operating Experience

Tim,

I just wanted to let you know that I reviewed the Oyster Creek aging management program for Feedwater Nozzles and found that AmerGen's operating experience review went back to 1977. I've attached a portion of AmerGen's AMP for Feewater Nozzles FYI.

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Subject: Aging Management Program for Feedwater Nozzles -Operating Experience
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From: Paul Kaufman
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Oyster Creek BWR Feedwater Nozzle

2.10 Operating Experience

NUREG-1801: Cracking has occurred in several BWR plants (NUREG-0619, NRC Generic Letter 81-11). This AMP has been implemented for nearly 25 years and has been found to be effective in managing the effect of cracking on the intended function of feedwater nozzles.

Oyster Creek: Operating experience, both internal and external, is used in two ways at Oyster Creek to enhance plant programs, prevent repeat events, and prevent events that have occurred at other plants from occurring at Oyster Creek. The first way in which operating experience is used is through the Oyster Creek Operating Experience process. The Operating Experience process screens, evaluates, and acts on operating experience documents and information to prevent or mitigate the consequences of similar events. The second way is through the process for managing programs. This process requires the review of program related operating experience by the program owner.

Both of these processes review operating experience from both external and internal (also referred to as in-house) sources. External operating experience may include such things as INPO documents (e.g., SOERs, SERs, SENs, etc.), NRC documents (e.g., GLs, LERs, INs, etc.), General Electric documents (e.g., RCSILs, SILs, TILs, etc.), and other documents (e.g., 10CFR Part 21 Reports, NERs, etc.). Internal operating experience may include such things as event investigations, trending reports, and lessons learned from in-house events as captured in program notebooks, self-assessments, and in the 10 CFR Part 50, Appendix B corrective action process.

BWR Feedwater Nozzle inspections have been implemented through the station ISI program plan, which incorporates the requirements of the ASME Code. Augmented inspections were performed in accordance with NUREG-0619, BWR Feedwater Nozzle and Control Rod Return Line Nozzle as modified in accordance with reference 4.3.3.

Demonstration that the effects of aging are effectively managed is achieved through objective evidence that shows that cracking is being adequately managed in feedwater nozzles. The following examples of operating experience provide objective evidence that the BWR Feedwater Nozzle aging management program is effective in assuring that intended function(s) will be maintained consistent with the CLB for the period of extended operation.

Oyster Creek inspected the feedwater nozzles in 1977 in response to industry experience. Cracks were found in the nozzles and repaired. To minimize thermal cycling and fatigue induced cracking, the thermal sleeves were modified with a piston type design. Subsequent inspections, the most recent in 2000, have found no indications in the feedwater nozzles. This provides objective evidence that the modifications have been effective in mitigating the effects of thermal fatigue on the feedwater nozzles.

As outlined in Reference 4.2.2, Since 1980 significant field experience without the presence of additional fatigue cracking in feedwater and CRD return line nozzles has been accumulated. The operating experience at Oyster Creek is consistent with the experience throughout the industry. For greater than 25 years the Oyster Creek BWR Feedwater Nozzle aging management program has been effective in managing the effect of cracking on the intended function of the feedwater nozzles.

The BWR Feedwater Nozzle aging management activities will provide timely detection of aging degradation prior to loss of system or component functions for the period of extended operation.