

June 7, 2010

NOTE TO: File

FROM: Jonathan Rowley, Project Manager */RA/*
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: Summary of Conference Call with Boiling Water Reactor Vessel and Internals
Project Regarding Recent Operating Experience Associated with Replacement
Steam Dryer

On May 17, 2010, the staff participated in a conference call regarding the need for guidance based on the recent operating experience (OpE) associated with the replacement steam dryer cracking at Susquehanna Steam Electric Station Unit 1 (SSES1), to prevent recurrence of similar cracking in future replacement steam dryers.

The SSES1 replacement steam dryer developed cracks/indications in the steam dryer skirt tee within one cycle of operation at 107% current licensing thermal power. The licensee concluded that these indications resulted from intergranular stress corrosion cracking, but could also have the potential to grow due to fatigue from increased flow-induced vibration loading associated with operation at the full extended power uprate conditions. Because the staff is aware of other licensee's future plans to replace steam dryers, this issue raised some concerns for the staff.

Therefore, the staff, in order to capture the recent plant operating experience at SSES1, discussed this issue with the Boiling Water Reactor Vessel and Internals Project (BWRVIP) so that it could communicate this recent OpE to the industry in order to prevent future recurrence of similar cracking that could potentially affect the nuclear units that are planning to replace the steam dryers in preparation for extended power uprates.

Based on this recent OpE at SSES1, during the call the staff requested the BWRVIP to address guidance with regards to following the fabrication specifications and implementing quality control procedures to control residual stresses from either welding or fabrication-induced cold work such as machining, grinding or forming operations.

The BWRVIP indicated that the guidance is already provided in the BWRVIP-84 topical report, which is referenced in the BWRVIP-181 topical report. It was noted that the NRC staff's safety evaluation for the BWRVIP-181 topical report was issued in November 2009.

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Also during the call, it was addressed that the SSES1 replacement steam dryer had already been fabricated by the time the staff's safety evaluation for the BWRVIP-181 topical report was issued. Therefore, it was agreed that it was more of a timing issue that the licensee (PPL Susquehanna, LLC) did not implement the BWRVIP-181 guidance at SSES1.

However, it was noted that General Electric - Hitachi entered the SSES1 replacement dryer cracking operating experience into its corrective action program. In addition, the BWRVIP will request the licensee to present the SSES1 steam dryer cracking OpE at the BWRVIP semi-annual meeting in June 2010.

The BWRVIP indicated that in the near future it would consider issuing a letter to its member utilities regarding this recent replacement steam dryer cracking operating experience.

Participants:

NRC: Meena Khanna, Chakrapani Basavaraju, Ganesh Cheruvenki, Ralph Architzel, Michael McCoppin

EPRI/BWRVIP: Randy Stark, Bob Carter, John Hosler, Robin Dyle, Ken Wolfe, Larry Steinert

PPL Susquehanna, LLC: Ron Vasquies

FirstEnergy: Chuck Wirtz

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