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Davis-BesseHearingFile Resource

From: CuadradoDeJesus, Samuel *MLRZ*
Sent: Tuesday, October 18, 2011 3:53 PM
To: Auluck, Rajender; Morey, Dennis; Pelton, David; Pham, Bo; Cooper, Paula; Wrona, David; Sheikh, Abdul; Lehman, Bryce
Cc: Davis-BesseHearingFile Resource
Subject: FW: Davis Besse Shield Building Issue Summary 10 17 11.docx
Attachments: Davis Besse Shield Building Issue Summary 10 17 11.docx

FYI

From: Sanchez Santiago, Elba *ESL*
Sent: Tuesday, October 18, 2011 3:21 PM
To: CuadradoDeJesus, Samuel
Subject: Davis Besse Shield Building Issue Summary 10 17 11.docx

Sam,

Attached is the 1-page summary of the issue. I will send you the presentation in a separate e-mail.

Thanks,
Elba

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Davis-Besse Shield Building Potential Cracking Issue

On October 1st, 2011, Davis-Besse shut down for a planned maintenance outage to replace the reactor vessel closure head. The reactor vessel, which the reactor vessel closure head is bolted on top of, is located inside containment. The Davis-Besse containment system consists of a 1.5' free-standing, steel containment vessel surrounded by a 2.5' thick reinforced concrete shield building with a 4' annulus region in-between. In order to remove the old reactor vessel closure head and install the new one, workers needed to cut a 26'x36' hole, in the reinforced concrete shield building and the steel containment vessel. The method used for the removal of concrete to create the temporary construction opening was hydro-demolition.

On October 10, 2011, during hydro-demolition operations of the concrete at the outer layer of steel reinforcement on the shield building, an indication in the concrete was found. Potential fracture lines were identified at the bottom of the opening near the left corner (facing inward); at the top of the opening at the upper left corner, and at the left side of the opening a vertical indication along the inner layer of rebar was found. In order to characterize the indications found in the shield building the licensee consulted industry experts from Sargent and Lundy, and Bechtel. Per their expert opinion the indications found in the concrete were a product of the hydro-blasting operations and not a pre-existing condition. In order to verify this, in the case of the indications identified at the bottom of the opening and the left side of the opening, the licensee decided to excavate these areas using a small chipping device. The result of this excavation was that the indications did not extend into or around the concrete structure, causing the licensee to conclude there was no evidence of structural cracking in these areas. In the case of the indications identified at the top of the opening at the upper left corner, the licensee has decided to perform core borings to facilitate analysis in this area. This activity has not yet been completed.

The safety functions of the shield building are, during operation, to provide shielding from radiation originating at the reactor vessel and the primary coolant loop components and provide environmental and tornado missile protection for the containment vessel. The shield building also has a safety related function related to a postulated accident inside containment such as serving as a negative pressure boundary for the Emergency Ventilation System.

The discovery of these indications in the concrete of the shield building does not represent an immediate safety concern because the plant is currently shutdown and the reactor vessel is defueled. Currently, NRC inspectors are on-site reviewing the concern as part of the inspection activities associated with the oversight of the modifications in the plant for the replacement of the reactor vessel closure head. The NRC inspectors concur with the actions taken to date by the licensee and continue to evaluate the licensee's preliminary conclusions that the indications are related to the hydro-demolition and do not appear to be preexisting flaws in the concrete shield building.