

24

Hernandez, Pete

From: Hernandez, Pete *INXOK*  
 Sent: Thursday, November 17, 2011 1:55 PM  
 To: Evans, Michele; Howe, Allen; Lund, Louise  
 Cc: Mahoney, Michael; Zimmerman, Jacob  
 Subject: Davis Besse Operability question

Good afternoon Michele,

I understand that the question of Operability vs design basis was posed. And if the Shield Building (SB) issue is in operations space, are qualitative evaluations the extent of review required by the licensee?

To answer that, the distinction between Operability and Functionality needs to be understood. The most clear way I've had it explained is that the determination of Operability is tied to the Tech Specs for the specific plant. If the Tech Specs are met, then it is operable. (An operability determination is usually prompted by degraded conditions, nonconforming conditions or the discovery of an unanalyzed condition.) Functionality is tied to the design bases documented in the FSAR and thereby tied to the Current Licensing Basis.

After clarifying with the region, I've tried to summarize Dave Hills' comments.

The USAR refers to the containment vessel and the surrounding shield building as portions of the "containment system" Besides being required to withstand an earthquake, the shield building serves 3 main functions:

- Limit the release of radioactivity during design basis accidents
- Create a negative pressure with respect to ambient for the Emergency ventilation system to take a suction
- Protect the containment vessel from tornado winds and missiles

The Tech Specs require both the containment and the emergency ventilation system to be operable in Modes 1, 2, 3, and 4. Regardless of whether you chose the term operable or functional with respect to the shield building, the concept is similar with respect to evaluating operability or functionality.

From IMC9900

"If an SSC described in TSs is determined to be operable even though a degraded or nonconforming condition is present, the SSC is considered "operable but degraded or nonconforming." An SSC that is determined to be operable but degraded or nonconforming is considered to be in compliance with its TS LCO, and the operability determination is the basis for continued operation. The basis for continued operation should be frequently and regularly reviewed until corrective actions are successfully completed."

The licensee's position is that the shield building is operational and conforming. That means it meets all design and code requirements including required safety margins. If they went down the operable but nonconforming route, and if we agreed with the conclusion, they could start up the plant, but we would expect them to have in place a plan to restore conformance at the next reasonable opportunity.

Currently they've given us a qualitative analysis to support their position that the shield building is functional and fully conforming. For NRC to accept and agree, which would mean no additional actions would be necessary to restore conformance, the licensee must provide reasonable assurance to show operability or functionality and provide a logical, supported basis that allows our technical reviewers to reasonably reach the same conclusion. In this case, the qualitative arguments did not provide the logical, supported basis for our technical reviewers to reach the operability conclusion. So we asked if they could provide additional assurance by in some way quantifying their analysis based upon good engineering principles.

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Since we've raised questions, the licensee's concrete/rebar bonding technical consultant, Dr. Darwin (Director of Structural Engineering and Materials Laboratory at the University of Kansas) has informed the licensee that with the assumptions they are making, no credit for the rebar impacted by the cracks is warranted. In light of this, the licensee has started to do more mapping and core bores to better analyze the SB.

Please let me know if I can provide more information.

Thanks,

Pete Hernandez