

## **Riley (OCA), Timothy**

---

**From:** Riley (OCA), Timothy  
**Sent:** Tuesday, May 08, 2012 5:02 PM  
**To:** 'Steyer, Ryan'; 'Doug\_Babcock@brown.senate.gov'; 'nick\_butterfield@portman.senate.gov'; 'Schulman, Howard'  
**Subject:** NRC Inspection Report for Davis-Besse  
**Attachments:** Davis Besse Shield Building Operability and Licensing Basis Inspection Report ML12128A4430.pdf

Good afternoon,

Please see the attached Davis Besse Shield Building Operability and Licensing Basis Inspection Report. Please contact me with any questions or concerns regarding this inspection report; there's significant nuance to how these are written and they won't win awards for Plain Writing.

This report documents the NRC's actions from July 18, 2011 to April 17, 2012 to make sure the shield building at Davis-Besse could operate with an opening during the reactor vessel head replacement process; the discovery of the cracks in the shield building; the wide range of actions after the discovery of the cracks to evaluate the shield building safety; and how the determination was made that the shield building was capable of fulfilling its safety function.

Nearly all of this was discussed at the January 5, 2012 Public Meeting.

One section I would like to call attention to in this report is on page 10 of the report (PDF page 13):

Therefore, the [NRC] inspectors, after consultation with the NRC technical review team, questioned if laminar cracking in proximity to the outer face reinforcement was a condition not in conformance with the current design basis. The inspectors noted that revised calculations provided on December 1, 2011, did not include such a claim, and instead the licensee continued to review the previous conclusion.

After additional evaluation and interactions with the inspectors, the licensee concluded in its Shield Building Root Cause Report dated February 27, 2012, that the SB [Shield Building], with the laminar cracking in its walls, was operable but non-conforming to the current design and licensing bases with regard to the design stress analysis methodology, and the tornado allowable stress values.

- Davis-Besse's Updated Safety Analysis Report (USAR) Section 3.8.2.2.5 and Design Criteria Manual (DCM) Section II.H.2.5.1.5 specified the analysis methodologies used for the SB design. These documents stated that the SB wall was designed using, "Analysis of Spherical Shells" from Section III of the 1968 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. In the initial condition assessment, Calculations C-CSS-099.20-054 and C-CSS-099.20-056 used the "ANSYS" computer software to study the effect of the laminar cracks on the function of the SB.

- The USAR Section 3.8.2.2.6 and Design Criteria Manual (DCM) Section II.H.2.5.1.5 defined the load combinations and allowed stresses for the SB design. Study Calculation C-CSS-099.20-056 documented that the calculated stress for the tornado wind and differential pressure load exceeded the allowable stress value in the design and licensing basis, but was within the allowable limit using the alternative differential pressure design load of Regulatory Guide 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants," Revision 1.

The inspectors noted that any future calculations used to evaluate the SB with the concrete laminar cracking will have to conform to the design and licensing bases. The licensee documented in its Root Cause Report its intention to generate an engineering plan by December 1, 2012, to re-establish the SB licensing basis.

What is significant about these highlighted pieces is that a) since the public meeting FENOC has concluded that the shield building does not meet design basis [at the time of the public meeting, this issue was disputed

between NRC and FENOC] and b) FENOC has proposed corrective action to return the Shield Building to licensing basis.

The root cause report referenced above is currently under review (with accompanying inspections). The NRC response (Davis Besse Shield Building Root Cause and Corrective Action inspection Report) is expected to be completed within two months.

Please contact me with questions,

Timothy Riley  
Congressional Affairs Officer  
U. S. Nuclear Regulatory Commission  
Office of Congressional Affairs  
Phone: 301-415-8492

Blackberry: (b)(6)