Davis-BesseNPEm Resource

From: Holmberg, Mel
Sent: Monday, December 12, 2011 10:05 AM
To: gmwolf@firstenergycorp.com
Subject: Shield Building Crack Root Cause Followup Inspection- Information Request
Attachments: DB SB Crack RC Investigation Information Needed.docx

Gerry,

As we discussed, this is the information we need to begin an NRC inspection of the shield building cracking root cause. If you have any questions please contact me.

Thank you,

Mel Holmberg

Hearing Identifier: Davis_BesseLicenseRenewal_Saf_NonPublic
Email Number: 3317

Mail Envelope Properties (Mel.Holmberg@nrc.gov20111212100500)

Subject: Shield Building Crack Root Cause Followup Inspection- Information Request
Sent Date: 12/12/2011 10:05:25 AM
Received Date: 12/12/2011 10:05:00 AM
From: Holmberg, Mel

Created By: Mel.Holmberg@nrc.gov

Recipients:
"gmwolf@firstenergycorp.com" <gmwolf@firstenergycorp.com>
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MESSAGE	222	12/12/2011 10:05:00 AM
DB SB Crack RC Investigation Information Needed.docx	28371	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
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December 12, 2011

Davis Besse Information Request – Inspector M. Holmberg - (630) 829-9748, msh@nrc.gov

To support an NRC inspection (followup review) please have the following information provided to the Site Resident Inspectors Office on Monday January 9, 2012. This information is needed to support NRC review of the root cause of cracking in the shield building (SB) identified during the recent 17-M Davis-Besse outage. This inspection will be conducted in accordance with Section 02.04.c and Appendix B "Temporary Containment Opening Review Guidance" of NRC inspection procedure IP 71007 "Reactor Head Replacement." If any records are not available on January 9, 2012, please identify a date when this information will be available.

1) All site and vendor corrective action records related to the identification of cracks in the SB.

2) Copy of corrective action records (for past 5 years) that identify degraded conditions associated with the shield building.

3) Composition of Root Cause Team (RCT) investigating the SB cracks (Including contractors) – Please identify the Team Lead, Members (with a short biography/resume) and contact numbers.

4) Identify the corrective action record associated with the RCT efforts to determine the cause of the SB cracking.

5) RCT- Charter defining scope and methods used to identify the root cause of the SB cracking.

6) Current (draft) of the list of potential causes considered and preliminary status (e.g. possible cause or ruled out). Additionally, provide the draft RCT assessment with respect to the potential cause of these cracks associated with concrete carbonation (CC). CC is caused by the seepage of carbon dioxide through the concrete wall creating a chemical reaction that lowers the alkalinity of the concrete leading to corrosion of the steel reinforcing materials (rebar). As the steel corrodes, it expands and creates cracks in the concrete that may run adjacent to the steel rebar.

7) Identify (if) and to what extent the RCT has considered the information developed by Oak Ridge National Laboratory related to concrete degradation (reference NUREG/CR NUREG/CR-6927 - ORNL/TM-2006/529- in Primer on Durability of Nuclear Power Plant Reinforced Concrete Structures - A Review of Pertinent Factors published in February 2007). If this information was not considered explain why it was not considered applicable to this root cause investigation.

8) Identify and describe any nonconformances for the SB concrete or steel reinforcement (rebar) with applicable specifications, standards or design that have been identified to date (e.g. up thru January 1, 2012) by the RCT investigation of the SB cracking.

9) Drawings/maps that identify the extent of SB cracking identified to date and document which identifies any additional plans to further define the extent of SB cracking.

10) Drawings/maps that identify the extent of nondestructive examinations and location of core bores used to confirm the current extent of SB cracking to date.

11) Plan/instruction which identifies the concrete samples removed from the SB to be subjected to further examination or testing in support of the RCT investigation.

12) Identify list and provide a copy of the vendor procedures or applicable American Society for Testing and Materials (ASTM) standards applied for each test or examination performed on SB concrete samples in support of the RCT investigations and the intended purpose for each test/exam performed. If any testing or examination of concrete were conducted without approved procedures identify these tests or examinations and the extent to which this information is relied upon by the RCT.

13) Provide the owner's acceptance review of the vendor tests/exams discussed in question 12 above. If an owner's acceptance review is not required, explain.

14) Qualifications and certifications for contractors performing tests and examinations in support of the SB root cause investigation.

15) Schedule for completion of root cause report and any interim milestones (e.g. core bore testing complete, creep testing complete, data analysis complete, etc).

16) Schedule for completion of extent of condition review for cracking.

17) Purchase Orders for vendors performing work or testing in support of SB root cause (e.g. testing, examination of core bores).

18) Copy of the following site or corporate procedures associated with:

a) The corrective action process including screening and defining significance of corrective action records.

b) Defining quality assurance requirements applicable to vendors that perform tests or examinations in support of root cause investigations.

19) Copy of vendor procedure used for impulse response testing (IRT) and mapping of crack locations in the SB.

20) If the extent of SB cracking is reliant upon IRT, provide the bases document which validates this method (e.g. confirmatory core bore tests with statistically valid sample size). Additionally, provide the owner's acceptance review of this document.