

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of)	Docket No. 50-346-LR
First Energy Nuclear Operating Company)	
(Davis-Besse Nuclear Power Station, Unit 1))	August 16, 2012
.)	

* * * * *

**INTERVENORS' FIFTH MOTION TO AMEND AND/OR SUPPLEMENT PROPOSED
CONTENTION NO. 5 (SHIELD BUILDING CRACKING)**

*APPENDIX V: NRC FOIA RESPONSES (B-33
THROUGH B-38)*

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CuadradoDeJesus, Samuel

From: Lehman, Bryce *nmk*
Sent: Thursday, December 01, 2011 4:45 PM
To: Sheikh, Abdul; Erickson, Alice
Cc: CuadradoDeJesus, Samuel; Sakai, Stacie; Morey, Dennis
Subject: Davis-Besse Shield Building
Attachments: Davis-Besse Shield Building Brief - Lehman.pptx

Attached are the most recent slides for our brief with Melanie on Davis-Besse (3:15 on Tuesday). If you have time please review and provide feedback.

Alice, I made some minor changes and added a slide to the presentation you originally sent. Thanks for your help!

Abdul, The information in the presentation was accurate as of 11/18, but we could really use your help updating it to reflect what has happened since then. We especially need help filling in slide 10 'NRC's Concerns.' If you don't think you will be able to get to this by Monday afternoon, please let me know so Alice and I can plan accordingly.

Thanks,
Bryce Lehman
O-11F10
(301) 415-1626
Bryce.Lehman@nrc.gov

~~B~~
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CuadradoDeJesus, Samuel

From: Morey, Dennis *nrc*
Sent: Thursday, December 01, 2011 7:42 PM
To: CuadradoDeJesus, Samuel
Subject: Re: Davis-Besse Shield Building

Sam,

Actually, Bryce needs our comments. Do you have any comments? Thanks.

-----Original Message-----

From: Samuel CuadradoDeJesus *nrc*
To: Morey, Dennis
Subject: RE: Davis-Besse Shield Building
Sent: Dec 1, 2011 5:43 PM

I agree Dennis. I don't know if Abdul will be back tomorrow (he's at DB) but I'll schedule a meeting with him before we meet with Melanie.

nrc
From: Morey, Dennis **Sent:** Thursday, December 01, 2011 5:41 PM **To:** CuadradoDeJesus, Samuel **Subject:** Re: Davis-Besse Shield Building

Sam, We need to take a close look at this. Dennis - sent from an NRC Blackberry

From: Lehman, Bryce **To:** Sheikh, Abdul; Erickson, Alice **Cc:** CuadradoDeJesus, Samuel; Sakai, Stacie; Morey, Dennis **Sent:** Thu Dec 01 16:45:29 2011 **Subject:** Davis-Besse Shield Building Attached are the most recent slides for our brief with Melanie on Davis-Besse (3:15 on Tuesday). If you have time please review and provide feedback.

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Bryce Lehman
O-11F10
(301) 415-1626
Bryce.Lehman@nrc.gov

Dennis - sent from an NRC Blackberry

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Erickson, Alice

From: Morey, Dennis *mark*
Sent: Friday, December 02, 2011 9:16 AM
To: Lehman, Bryce; Sheikh, Abdul; Erickson, Alice
Cc: CuadradoDeJesus, Samuel; Sakai, Stacie; Ferrer, Nathaniel
Subject: RE: Davis-Besse Shield Building

Bryce,

The issue with the D-B crack is that the location and direction of the crack are not clear from the diagrams.

Next, I think we should say that operability is still being discussed. If D-B is allowed to start up, there needs to be a slide describing why it is OK.

Finally, I think the LR impact needs to be clearer (on the final slide):

- ☐ Degraded concrete is a Part 50 issue affecting license renewal
- ☐ DLR needs to understand if the degradation is age-related and progressive etc. and how the effect will be managed
- ☐ DLR has prepared a draft RAI asking the applicant to explain how the unique OE will be addressed by its AMPs
 - ☐ Currently holding the RAI until more information is known in the Part 50 arena (root cause, proposed solution, etc.)
 - ☐ This will be tracked as an Open Item in SER

Thanks,

Dennis Morey

From: Lehman, Bryce *mark*
Sent: Thursday, December 01, 2011 4:45 PM
To: Sheikh, Abdul; Erickson, Alice
Cc: CuadradoDeJesus, Samuel; Sakai, Stacie; Morey, Dennis
Subject: Davis-Besse Shield Building

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Thanks,

Bryce Lehman

O-11F10

(301) 415-1626

Bryce.Lehman@nrc.gov

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Erickson, Alice

From: Lehman, Bryce *in PR*
Sent: Friday, December 02, 2011 3:59 PM
To: Sakai, Stacie; Erickson, Alice
Subject: FW: Davis Besse POP

FYI

From: Hernandez, Pete *in PR*
Sent: Friday, December 02, 2011 3:47 PM
To: Evans, Michele
Cc: Howe, Allen; Lund, Louise; Auluck, Rajender; CuadradoDeJesus, Samuel; Gonzalez, Hipolito; Haskell, Russell; Hernandez, Pete; Hills, David; Hoang, Dan; Lehman, Bryce; Lupold, Timothy; Mahoney, Michael; Miller, Barry; Morey, Dennis; Murphy, Martin; Nolan, Ryan; Rezai, Ali; Rihm, Roger; Sanchez Santiago, Elba; Sheikh, Abdul; Snyder, Amy; Thorp, John; Wiebe, Joel; Zimmerman, Jacob; Graves, Herman
Subject: RE: Davis Besse POP

Good afternoon Michele,

Here are the key messages regarding the Davis Besse Shield Building and I've attached the updated POP with the decision made by the tech staff.

Key Messages:

- Tech staff unanimously concurred on the decision that the licensee provided reasonable assurance for the Shield Building will perform its safety function. There are no further questions from the NRC to be answered before startup can commence.
- A CAL was issued addressing completed and planned actions for the licensee to provide continued long-term confidence of the SB safety functions.
- Region 3 is implementing their Communication plan to notify internal and external stakeholders.
- The licensee expects to enter Mode 4 today December 2, 2011 at 1800 and continue progressing with plant startup.



2011-2-12 POP -
Davis-Besse Co...

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**DAVIS-BESSE NUCLEAR POWER STATION
CONTAINMENT SHIELD BUILDING ISSUE
12/2/2011**

PURPOSE: To inform NRR senior management of situation at Davis-Besse with the Containment Shield Building cracks identified, and licensee response.

EXPECTED NRR management to understand the status of Davis-Besse's Containment

OUTCOMES: Shield Building (SB).

PROCESS:

Note: Region 3 has the lead for this issue and they are implementing their communication strategy to inform stakeholders, including interested Congressman, press and general public, of the decisions and rationale. This document is for NRR Internal information only.

Background

While creating an access hole for Reactor Pressure Vessel head replacement, three issues were identified: (#1) Extensive cracking in the shoulder region, (#2) Cracking in the structural region outside the flute shoulder region near the main steam piping penetrations, (#3) Cracking indications via Impact Response (IR) mapping in the cylindrical portion of the building near the top of the building at the interface between the domed roof and the cylindrical wall. All three issues were evaluated.

The licensee conducted IR mapping, and core bores to determine the operability of the SB. Questions from NRC staff regarding the assumptions and calculations were resolved through more in-depth calculations and discussion between the NRC and licensee. After clarification of NRC questions, final calculations were provided to NRC technical staff on Thursday, December 1, 2012.

Decision

- NRC Technical staff on site at Davis Besse and at headquarters reviewed the final calculations on Thursday and Friday, December 1 and December 2, 2011.
- The conclusion was made that the licensee had provided reasonable assurance that with the current condition, the SB will perform its safety function. All technical staff from the region and headquarters concurred with this conclusion. There are no further questions from the NRC to be answered before startup can commence.
- The Technical review team will take the recommendation to senior management in the region, and the senior management will communicate the decision to the licensee.
- The licensee expects to enter Mode 4 today, December 2, 2011 at 1800 and continue progressing with plant startup.
- A Confirmatory Action Letter will be issued today with completed and planned actions for the licensee to provide continued long-term confidence of the SB ability to meet the safety functions.
- A public meeting will be held on December 15, 2011.

NRC Question:

- The licensee still has unresolved questions to answer regarding the design basis of the plant. Basically, when the SB was built the requirements and codes it was built under were for an uncracked building. Because the building is now cracked, the question of whether the SB still meets the requirements as stated in the FSAR and licensing basis needs to be evaluated.

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Craver, Patti

From: Zimmerman, Jacob *incc*
Sent: Saturday, December 03, 2011 10:12 AM
To: Evans, Michele; Howe, Allen; Lund, Louise
Subject: Fw: PRESS RELEASE HAS BEEN ISSUED
Attachments: DB- CAL-assurance pr.docx

Michele/Allen/Louise

FYI: NRC Press Release on Davis-Besse shield building. I think they did a nice job crafting it. I especially like that they addressed fully documenting the decision.

Have a great weekend!
Jake

KL

From: Mitlyng, Viktoria *12/11*
To: Briley, Thomas; Murphy, Martin; Cameron, Jamnes; Wilson, Adam; Kimble, Daniel; Rutkowski, John; Hills, David; Haskell, Russell; Nolan, Ryan; Mahoney, Michael; Hernandez, Pete; Chandrathil, Prema; Neurauter, James; Zimmerman, Jacob; Hoang, Dan; Logaras, Harral; Barker, Allan; Sheikh, Abdul; Snyder, Amy; Wiebe, Joel; Meghani, Vijay; Smagacz, Phillip; Riley (OCA), Timothy; Jessup, William; Graves, Herman; Sakai, Stacie; Manoly, Kamal; Rezai, Ali; Sanchez Santiago, Elba; Steffes, Jakob; Lupold, Timothy; Gonzalez, Hipolito; Thorp, John; CuadradoDeJesus, Samuel; Thomas, George; Auluck, Rajender; Lehman, Bryce; Morey, Dennis; Burza, Justine; Stone, AnnMarie; Hogan, Rosemary; Case, Michael; Richards, Stuart; Hiland, Patrick; Orth, Steven; Cheok, Michael; Boland, Anne; Loughheed, Patricia; Zerth, Marjorie
Cc: Shear, Gary; OBrien, Kenneth; West, Steven; Reynolds, Steven; Pederson, Cynthia; Uhle, Jennifer
Sent: Fri Dec 02 17:30:48 2011
Subject: PRESS RELEASE HAS BEEN ISSUED

The press release associated with our conclusion on the safety of the shield building and the Confirmatory Action Letter has been issued.

Viktoria Mitlyng
Office of Public Affairs
US Nuclear Regulatory Commission
Region III
Lisle, IL 60532
Tel 630/829-9662
Fax 630/515-1026
e-mail: viktoria.mitlyng@nrc.gov

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NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Region III

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Lisle IL 60532

Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. III-11-036

Contact: Viktoria Mitlyng (630) 829-9662
Prema Chandrathil (630) 829-9663

December, 2 2011

E-Mail: OPA3.RegionIII@nrc.gov

NRC CONCLUDES DAVIS-BESSE SAFE TO RESTART AND ISSUES CONFIRMATORY ACTION LETTER

The U.S. Nuclear Regulatory Commission has determined that the operators of the Davis-Besse nuclear power plant, FirstEnergy Nuclear Operating Corp. (FENOC) have provided reasonable assurance that the shield building is capable of performing its safety functions and that the utility can proceed with restarting the plant. The NRC's independent assessment evaluated a wide range of information such as technical details ranging from the size of the cracks, the utility's sampling and testing of the concrete in the building to determine the extent of the cracks, and its structural analysis. The plant is located in Oak Harbor, Ohio about 40 miles southeast of Toledo.

The NRC will hold a public meeting in which FENOC will discuss their technical analysis and explain why the plant is safe to continue to operate with the cracks in the shield building. The meeting will take place in the near future with details to be issued once finalized.

However, the NRC has issued a Confirmatory Action Letter (CAL) to the operator of the plant, FENOC. The CAL details and confirms FENOC's agreement to take certain actions to monitor and ensure the cracks in the shield building continue to not adversely impact safety going forward. The NRC will review and evaluate FENOC's actions in response to the CAL in order to make sure they are thorough and complete.

The FENOC commitments to the NRC include:

- Determine and provide the root cause of the cracks in the shield building, corrective actions, and develop a long-term monitoring program.
- Select multiple areas in the shield building that have no cracks but are adjacent to known cracks to determine whether the area of the cracks has spread.
- Perform additional analysis in known cracked areas to determine whether the width of the cracks has increased.

Even though the NRC has concluded the shield building can perform its safety functions, the NRC will continue to inspect whether the shield building in its current condition meets all design requirements in the plant's license.

Failure to meet the commitments in the CAL may result in additional regulatory action if the utility does not provide reasonable assurance that the NRC can rely on the FENOC to meet the NRC's requirements and protect public health and safety.

On Oct. 10 the NRC was informed by FENOC that while conducting work to replace the Davis-Besse reactor vessel head its workers identified cracks in the shield building. The shield building is a 2.5 foot thick reinforced concrete building that surrounds a 1.5 inch thick steel containment vessel that encloses the reactor. The two buildings are separated by a 4.5 foot space.

The NRC will issue an inspection report documenting its review of this issue and the agency's conclusions 45 days after the inspection is complete.

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News releases are available through a free [listserv subscription](#) or by clicking on the [EMAIL UPDATES](#) link on the NRC homepage (www.nrc.gov). E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

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CuadradoDeJesus, Samuel

From: Mitlyng, Viktoria
Sent: Monday, December 05, 2011 8:44 AM
To: Briley, Thomas; Murphy, Martin; Cameron, Jamnes; Wilson, Adam; Kimble, Daniel; Rutkowski, John; Hills, David; Haskell, Russell; Nolan, Ryan; Mahoney, Michael; Hernandez, Pete; Chandrathil, Prema; Neurauter, James; Zimmerman, Jacob; Hoang, Dan; Logaras, Harrai; Barker, Allan; Sheikh, Abdul; Snyder, Amy; Wiebe, Joel; Meghani, Vijay; Smagacz, Phillip; Riley (OCA), Timothy; Jessup, William; Graves, Herman; Sakai, Stacie; Manoly, Kamal; Rezai, Ali; Sanchez Santiago, Elba; Steffes, Jakob; Lupold, Timothy; Gonzalez, Hipolito; Thorp, John; CuadradoDeJesus, Samuel; Thomas, George; Auluck, Rajender; Lehman, Bryce; Morey, Dennis; Burza, Justine; Stone, AnnMarie; Hogan, Rosemary; Case, Michael; Richards, Stuart; Hiland, Patrick; Orth, Steven; Cheok, Michael; Boland, Anne; Lougheed, Patricia; Zerth, Marjorie
Cc: Shear, Gary; OBrien, Kenneth; West, Steven; Reynolds, Steven; Pederson, Cynthia; Uhle, Jennifer
Subject: Davis-Besse coverage

Regulators Will Allow Ohio Nuclear Plant To Reopen, Say Cracks Found In Concrete Not A Danger (AP)

Associated Press, December 2, 2011

OAK HARBOR, Ohio — Federal regulators will allow an Ohio nuclear reactor to reopen after being satisfied that cracks discovered in concrete at the plant don't pose a safety concern.

The Nuclear Regulatory Commission said Friday that the operator of the nuclear plant along Lake Erie has given them reasonable assurance that cracks found on the outside of the reactor containment building don't pose a safety threat.

The Davis-Besse (BEH'-see) plant outside Toledo was shut down in October for installation of the 82-ton reactor head. Soon afterward, crews discovered a 30-foot hairline crack in the outer wall.

Plant operator FirstEnergy Corp. says it will closely monitor the containment building and try to find out what led to the cracks.

Davis-Besse Allowed To Restart Operations (TOLB)

By David Patch

Toledo (OH) Blade, December 2, 2011

OAK HARBOR, Ohio — The Nuclear Regulatory Commission has given FirstEnergy a green light to restart the Davis-Besse nuclear power plant while ordering the company to investigate further the cause and extent of cracks discovered during October in the plant's concrete shield building.

In a "confirmatory action letter" to FirstEnergy Nuclear Operating Co., Cynthia Pederson, the NRC's acting regional administrator, wrote that her agency had been provided "reasonable assurance that the shield building is capable of performing its safety functions" despite the multiple hairline cracks discovered after a hole was cut in the concrete through which reactor heads were swapped out.

But the letter requires FirstEnergy to "provide the results of the root cause evaluation and corrective actions to the NRC, including any long-term monitoring requirements, by Feb. 28, 2012" and describes the nature of further testing necessary to determine if the cracks are spreading or widening.

Further study also will be required during a refueling outage scheduled for next year, Ms. Pederson wrote.

NRC also announced that a public meeting will be held, on a date and at a place to be determined, during which FirstEnergy will "discuss their technical analysis and explain why the plant is safe to continue to operate with the cracks in the shield building."

The commission said it would issue its own inspection report and conclusions about the plant on Jan. 16.

Jennifer Young, a FirstEnergy spokesman, confirmed that the re-start go-ahead had been received, but declined to say when Davis-Besse would be back on-line.

"We are wrapping up our outage activities, and beginning the re-start," Ms. Young said Friday.

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The Davis-Besse plant's reactor chamber is enclosed by a 1.5-inch thick steel containment vessel and the shield building, made of concrete 2.5 feet thick. Officials have described the shield building's primary role as protection of the plant against terrorism or natural disasters, but it also would provide secondary containment if the steel enclosure were breached.

FirstEnergy is in the midst of applying for an extension of Davis-Besse's operating license, which expires in 2017. Anti-nuclear activists have argued that the cracking concrete in the shield building is yet another reason, on top of the plant's troubled safety history, for Davis-Besse's license not to be renewed or, alternatively, to be extended for a shorter time than the 20-year extension FirstEnergy has requested.

A 30-foot, barely visible crack was discovered in "architectural concrete" adorning the outside of the Shield Building after workers used hydro-demolition — high-pressure water — Oct. 10 to cut the hole for the reactor-head exchange. Additional, similar cracks were later discovered during investigation.

Michael Keegan, one of several critics who have intervened in the re-licensing proceedings, called the Confirmatory Action Letter "a big fat nothing" and repeated his doubts about the wisdom of re-starting Davis-Besse.

The NRC's re-start approval, he said, is "a promise to kick the can down the road and roll the dice one more time. The concept of 'Use As Is,' when it comes to operating a nuclear power plant, is a risky proposition."

In a Nov. 21 letter to the NRC, US Rep. Dennis Kucinich (D., Cleveland) questioned the Shield Building's structural soundness in light of the crack and requested a hearing like the one the agency said it will hold — except that Mr. Kucinich wanted the hearing held before the plant's restart.

Business Briefs -- Dec. 2 (AKRONBJ)

Akron Beacon Journal, December 2, 2011

Business briefs -- Dec. 2

LOCAL BUSINESS

Davis-Besse cleared to restart

The US Nuclear Regulatory Commission on Friday said it had determined that FirstEnergy Corp.'s Davis-Besse nuclear power plant can safely restart. The NRC was informed on Oct. 10 by FirstEnergy Nuclear Operating Co. that it had identified cracks in the shield building while conducting work to replace the reactor vessel head. The NRC will schedule a public meeting to discuss the technical analysis. The agency has also issued a letter detailing the company's agreement to ensure the cracks do not affect safety in the future.

YRC stock adjusted

Nuclear Power Plant Safe To Restart, NRC Determines (PWRMAG)

Power Engineering Magazine, December 2, 2011

The US Nuclear Regulatory Commission (NRC) said that the operators of the 913 MWe Davis-Besse nuclear power plant, FirstEnergy Nuclear Operating Corp. (FENOC), have provided "reasonable assurance" that the shield building is capable of performing its safety functions and that the utility can proceed with restarting the plant.

On Oct. 10, the NRC was informed by FENOC that while conducting work to replace the reactor vessel head, workers identified cracks in the shield building. The shield building is a 2.5 foot thick reinforced concrete building that surrounds a 1.5 inch thick steel containment vessel that encloses the reactor. The two buildings are separated by a 4.5 foot space.

The NRC said it's independent assessment evaluated a range of information such as technical details ranging from the size of the cracks, the utility's sampling and testing of the concrete in the building to determine the extent of the cracks, and its structural analysis.

The NRC, though, has issued a Confirmatory Action Letter (CAL) to FENOC. The CAL details and confirms FENOC's agreement to take certain actions to monitor and ensure the cracks in the shield building continue to not adversely impact safety going forward. The NRC will review and evaluate FENOC's actions in response to the CAL in order to make sure they are thorough and complete.

The FENOC commitments to the NRC include:

- Determine and provide the root cause of the cracks in the shield building, corrective actions, and develop a long-term monitoring program;
- Select multiple areas in the shield building that have no cracks but are adjacent to known cracks to determine whether the area of the cracks has spread;
- Perform additional analysis in known cracked areas to determine whether the width of the cracks has increased.

The NRC said it will continue to inspect whether the shield building in its current condition meets all design requirements in the plant's license. Failure to meet the commitments in the CAL may result in additional regulatory action if the utility does not provide reasonable assurance that the NRC can rely on the FENOC to meet the NRC's requirements and protect public health and safety.

WTVG-TV 📺 Toledo, Ohio (12/3, 9:54 a.m., EDT) broadcast, "Federal regulators are going to allow the Davis Besse plant to re-open. The Nuclear Regulatory Commission said that the plant's operator has given regulators reasonable assurance that cracks found on the outside of the reactor containment building doesn't pose a safety threat. Davis Besse closed in October for the installation of an 82 ton reactor head. Soon after that crews discovered a 30 foot hairline crack in the outer wall. First Energy says it will monitor the containment building to try to find what led to the crack." WTOL-TV 📺 Toledo, Ohio (12/3, 9:03 a.m., EDT) also covered this story.