UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 15, 2014

Mr. Raymond A. Lieb, Vice President
Davis-Besse Nuclear Power Station
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DAVIS-BESSE NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION (TAC NO. ME4640)

Dear Mr. Lieb:

By letter dated August 27, 2010, FirstEnergy Nuclear Operating Company (FENOC or the applicant) submitted an application pursuant to Title 10 of the *Code of Federal Regulations*, Part 54 for renewal of Operating License NPF-3 for the Davis-Besse Nuclear Power Station. The staff of the U.S. Nuclear Regulatory Commission (NRC or the staff) is reviewing this application in accordance with the guidance in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants." During its review, the staff has identified areas where additional information is needed to complete the review. The staff's request for additional information are included in the enclosure. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Cliff Custer, of your staff, and a mutually agreeable date for the response is July 1, 2014. If you have any questions, please contact me by telephone at 301-415-3809 or by e-mail at Juan.Uribe@nrc.gov.

Sincerely,

Juan Uribe, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure:
As stated

cc w/encl: Listserv

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ADAMS Accession No.: ML14097A454 *concurred via email

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DAVIS-BESSE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION

RAI B.2.43-4

Recent Plant-Specific Operating Experience-Shield Building Monitoring Program

Background:

In October 2011, during hydro-demolition operations to create a construction opening to support the scheduled reactor head replacement, FirstEnergy Nuclear Operating Company (FENOC or the applicant) discovered laminar cracking in the concrete of the shield building at Davis-Besse Nuclear Power Station (Davis-Besse). While investigating the extent of the cracking using the impulse response technique and confirmatory core bores, the applicant identified additional laminar cracking around the shield building. Although the root cause analysis determined that the initial laminar cracking was event driven (the blizzard of 1978), the staff was concerned that without an adequate aging management program (AMP) the cracks could grow and affect the safety function of the shield building during the period of extended operation. In response to the staff's concern, the applicant submitted a plant-specific AMP "Shield Building Monitoring Program" described in license renewal application (LRA) Sections A.1.43 and B.2.43 to address the cracking in the shield building. The Shield Building Monitoring Program is a prevention and condition-monitoring program that supplemented the Structures Monitoring Program (LRA Sections A.1.39 and B.2.39) for shield building concrete components exposed to an air-outdoor environment. The applicant proposed to apply a waterproof coating to the shield building and to monitor existing core bores for indications of changes in the cracking. The applicant also stated that rebar will be monitored for corrosion on an opportunistic basis when exposed. Following review of the Shield Building Monitoring Program, responses to several rounds of follow-up requests for additional information (RAIs), and an updated Shield Building Monitoring Program, the NRC staff found the updated Shield Building Monitoring Program to be acceptable, as documented in Section 3.0.3.3.9 in the NRC staff's September 3, 2013, Safety Evaluation Report related to the License Renewal of Davis-Besse Nuclear Power Station (ADAMS Accession No. ML13248A267).

Issue:

1) The NRC staff understands that during a subsequent routine baseline inspection in August/September 2013, FENOC discovered several (about 15) cracks on the Davis-Besse shield building that were not identified previously. FENOC subsequently inspected and removed additional core samples and conducted further evaluations and testing to determine the root cause of the cracks and their apparent progression.

2) Further, the NRC staff understands that in the ongoing February 2014 refueling outage, during hydro-demolition activities for creation of a construction opening in the Davis-Besse shield building to support the scheduled steam generator replacement, FENOC learned that several (at least 26) sections of steel reinforcement (rebar) had been broken and/or cracked in the construction opening area. Each section was apparently broken very close to the mechanical splice coupling used to splice the rebar during the head replacement outage in 2011. Samples of the broken rebar were sent to a laboratory for examination and assessment.

It is not clear to the NRC staff how this recent plant-specific operating experience will be incorporated, as applicable, into the Shield Building Monitoring Program and the Structures Monitoring Program AMPs credited for the shield building in the Davis-Besse LRA.

Request:

1. Explain, with sufficient technical detail, any modifications or enhancements that will be made to the Shield Building Monitoring Program; the Structures Monitoring Program; or other applicable AMP to account for this recent plant-specific operating experience described as Issue items 1 and 2 above.

2. If FENOC determines that no modifications or enhancements to the Shield Building Monitoring Program; the Structures Monitoring Program; or other applicable AMP are necessary based on the operating experience described as Issue items 1 and 2, explain, with sufficient technical detail, the basis for that determination.

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