

December 24, 2002

CAL No. 3-02-001B

Mr. Lew Myers  
Chief Operating Officer  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
5501 North State Route 2  
Oak Harbor, OH 43449-9760

SUBJECT: UPDATE OF CONFIRMATORY ACTION LETTER 3-02-001A STATUS FOR  
DAVIS-BESSE NUCLEAR POWER STATION

Dear Mr. Myers:

On March 13, 2002, the Nuclear Regulatory Commission (NRC) issued Confirmatory Action Letter No. 3-02-001 regarding the reactor pressure vessel head degradation at the Davis-Besse Nuclear Power Station. On May 15, 2002, the NRC revised the Confirmatory Action Letter, to address the option of replacing the reactor pressure vessel head. The Confirmatory Action Letter documented six sets of commitments you intended to take prior to restart of Davis-Besse. In your September 23, 2002, letter: "Transmittal of Revision 3 of the Davis-Besse Nuclear Power Station, Unit 1 Return to Service Plan," you described your course of action for a safe and reliable return to service, which included actions necessary to address each of the commitments contained in the Confirmatory Action Letter.

The enclosure to this letter details our understanding of the status of the commitments referenced above. Our understanding of your planned actions regarding the quarantined material from the damaged reactor vessel head is also included. Notify me if your understanding differs from that described in the enclosure.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If you have any questions regarding the information in this letter, please contact me at 630-829-9657, or John Grobe at 630-829-9637.

Sincerely,

**/RA/**

J. E. Dyer  
Regional Administrator

Docket No. 50-346  
License No. NPF-3

Enclosure: Confirmatory Action Letter Status

cc w/encl: B. Saunders, President - FENOC  
Plant Manager  
Manager - Regulatory Affairs  
M. O'Reilly, FirstEnergy  
Ohio State Liaison Officer  
R. Owen, Ohio Department of Health  
Public Utilities Commission of Ohio  
President, Board of County Commissioners  
Of Lucas County  
President, Ottawa County Board of Commissioners  
D. Lochbaum, Union Of Concerned Scientists

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## **Confirmatory Action Letter Status**

### **Confirmatory Action Letter Issue No. 1**

"Quarantine components or other material from the RPV [Reactor Pressure Vessel] head and CRDM [Control Rod Drive Mechanism] nozzle penetrations that are deemed necessary to fully address the root cause of the occurrence of degradation of the leaking penetrations. Prior to implementation, plans for further inspection and data gathering to support determination of the root cause will be provided to the NRC for review and comment."

#### Status

Applicable components and material have been adequately quarantined and plans for inspection and data gathering to support root cause determination have been provided to the NRC for review and comment. Following discussions between Mr. R. Schrauder of your staff and Mr. W. Dean, Vice Chairman of the Davis-Besse Oversight Panel on November 1, 2002, it is our understanding that the following additional specimens will be removed from the damaged reactor vessel head:

- 1) Approximately 8 inches diameter of head material unaffected by heat around CRDM penetration Nozzles 2 and 46,
- 2) Nozzle base material from any two of Nozzles 1, 2, 4, or 5 (heat no. M3935),
- 3) Nozzle base material from Nozzle 47 (heat no. C2649-1), and
- 4) Nozzle base material from any two of Nozzles 7, 12, 16, 20, 22-25, 27-29, 38-44, 48-55, 57, 64, 68, or 69 (heat no. C2649-1).

The nozzle base material will be cut off both at the head and below the bimetallic weld, resulting in pieces about 7 to 8 inches long. The point of contact for the shipments of these specimens to Argonne National Laboratory (ANL) is Mr. William Cullen, Jr., Senior Materials Engineer, Materials Engineering Branch, Office of Research (RES). Mr. Cullen can be reached at 301-415-6754. Following removal of the material described above, and its shipment to ANL, the head will be considered released from quarantine. All other specimen materials such as those sent to Canada and to Lynchburg, Virginia are also considered released from quarantine. Therefore Confirmatory Action Letter (CAL) Issue No. 1 will be considered closed following receipt of the material described above at ANL.

### **Confirmatory Action Letter Issue No. 2**

"Determine the root cause of the degradation around the RPV head penetrations, and promptly meet with the NRC to discuss this information after you have reasonable confidence in your determination."

Status

FENOC provided a Probable Cause Summary Report to the NRC on March 22, 2002, and submitted the Root Cause Analysis Report to the NRC on April 18, 2002. The technical aspects of the root cause were presented to the NRC at a public meeting on May 7, 2002. Subsequent to this, Revision 1 of the Root Cause Analysis Report was submitted on September 23, 2002. NRC review of the technical aspects of the root cause is ongoing.

FENOC submitted a formal root cause analysis report of the "Failure to Identify Significant Degradation of the Reactor Pressure Vessel Head" to the NRC on August 21, 2002. FENOC and Davis-Besse management met with NRC Region III management on August 15, 2002, to discuss the management and human performance aspects of the root cause. Initial NRC review of the organizational and human performance aspects of the root cause will be documented in NRC Inspection Report 50/346;2002-015. CAL Issue No. 2 will remain open pending further NRC review of your root cause efforts in this area.

**Confirmatory Action Letter Issue No. 3**

"Evaluate and disposition the extent of condition throughout the reactor coolant system relative to the degradation mechanisms that occurred on the RPV head."

Status

On April 15, 2002, FENOC began implementation of its "Davis-Besse Containment Health Assurance Plan". The scope of this plan was increased to encompass the overall health of the Containment. NRC review of your efforts in this area is documented in NRC Inspection Reports 50/346;2002-009 dated September 13, 2002, and 50/346;2002-012 dated November 29, 2002. While Inspection Report 50/346;2002-012 concluded that the "Davis-Besse Containment Health Assurance Plan" was effectively implemented, three unresolved items associated with corrective actions on components potentially affected by boric acid corrosion were identified. These unresolved items were associated with your corrective actions for corrosion of electrical conduit, the bottom nozzles on the reactor vessel, and the containment air coolers. Additionally, at the time, your staff had completed apparent cause determinations with designated corrective actions for only a small number of the components potentially affected by boric acid corrosion. For these reasons, we were not able to reach a conclusion on the completeness or technical adequacy of your corrective actions for structures, systems, and components affected by boric acid corrosion. Therefore, CAL Issue No. 3 will remain open pending additional NRC inspection of your action regarding those unresolved items and your corrective actions for identified deficiencies.

**Confirmatory Action Letter Issue No. 4**

"Obtain NRC review and approval of the repair or modification and testing plans for the existing RPV head, prior to implementation of those activities. Prior to restart of the reactor, obtain NRC review and approval of any modification and testing activity related to the reactor core or

reactivity control systems. If the reactor vessel head is replaced in lieu of repair or modification, the replacement must comply with appropriate Commission rules and industry requirements."

Status

FENOC elected to replace the damaged RPV head with one purchased from the owners of the canceled Midland Plant located in Michigan. NRC review of the head replacement is documented in NRC Inspection Report 50/346;2002-007, dated November 29, 2002. Based on our inspection, we concluded that adequate records were available and required examinations performed, to ensure that the replacement head was designed and fabricated in conformance with ASME Code requirements and that the original ASME Code Section III N-stamp remained valid. Licensing activities associated with the head replacement have been completed. CAL Issue No. 4 will remain open pending NRC review of successful completion of the reactor coolant system pressure test and control rod drive performance test.

**Confirmatory Action Letter Issue No. 5**

"Prior to the restart of the unit, meet with the NRC to obtain restart approval. During that meeting, we expect you will discuss your root cause determination, extent of condition evaluations, and corrective actions completed and planned to repair the damage and prevent recurrence."

Status

FENOC submitted Revision 3 of the "Davis-Besse Nuclear Power Station, Unit 1 Return to Service Plan" to the NRC on September 23, 2002. Upon completion of the restart actions described in this Plan, FENOC will submit its Integrated Restart Report which will summarize the root cause determination, extent of condition evaluations and corrective actions completed and planned to prevent recurrence. Prior to FENOC finalizing its decision to enter operating Mode 2, FENOC will meet with NRC to discuss completed and planned actions as described in this Plan and to provide justification for restart. CAL Issue No. 5 will remain open pending that meeting and NRC restart approval.

**Confirmatory Action Letter Issue No. 6**

"Provide a plan and schedule to the NRC, within 15 days of the date of this letter, for completing and submitting to the NRC your ongoing assessment of the safety significance for the RPV head degradation."

Status

The FENOC plan and schedule for completing and submitting your assessment of the safety significance of the RPV degradation was submitted to the NRC on March 27, 2002. FENOC submitted the Safety Significance Assessment to the NRC on April 8, 2002, and responded to NRC staff requests for additional information by letters dated June 12, 2002, July 12, 2002, and July 20, 2002. CAL Issue No. 6 is considered closed.