RAS C-125

U.S. NRC
In re DAVID GEISEN GEISEN Exhibit # 15
Docket # 1A-05-052
Date Marked for ID: 12/10, 2008 (Tr. p. 1534)
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Action: ADMITTED REJECTED WITHDRAWN
Date: 12/10, 2008 (Tr. p. 1534)

From: Rodney M. Cook/FirstEnergy
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cc:

Subject: Seraila 2735 - Supoplemental information

Date: 10/15/2001 8:14:351010

The attached is a draft of the supplemental letter to NRC that is due out on the 17th (this Wedneday). Please critically review this and provide your comments as soon a possible. Thanks

Rod
x7782

DOCKETED
USNRC

September 9, 2009 (11:00am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

S14M-05554

NRC017-2714

NRC017-2714

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S14M-05555

NRC017-2715

Docket Number 30-346

License Number NPF-3

Serial Number 2735

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC. 20555-0001

Subject: Supplemental Information in Response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles"

Ladies and Gentlemen:

The attached provides supplemental information concerning the Davis-Besse Nuclar Power Station, Unit 1 (DBNPS) response (Serial Number 2731, dated September 4, 2001) to Nuclear Regulatory Commission (NRC) Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles." This supplemental information provides amplification of previous inspection results at the DBNPS, the Structural Integrity Associates Reactor Vessel Head Penetration gap analysis, and describes the on-going activities which have occurred and are taking place subsequent to submittal of the NRC Bulletin response. This information was discussed with members of the NRC staff on October 3, 2001.

S14M-05556

NRC017-2716

If you have any question or comments, please contact Mr. David H. Lockwood, Manager, Regulatory Affairs, at (419) 321-8450.

Very truly yours,

RMC/s

Enclosure and Attachments

cc: J. E. Dyer, Regional Administrator, NRC Region III
S. P. Sands, DB-1 NRC/NRR Project Manager
D. Simpkins, DB-1 Resident Inspector
Utility Radiological Safety Board

S14M-05557

NRC017-2717

NRC017-2717

SUPPLEMENTAL INFORMATION

IN RESPONSE TO

NRC BULLETIN 2001-01

FOR

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NUMBER 1

This letter is submitted pursuant to 10 CFR 50.54(f) and contains supplemental information concerning the response (Serial 2371, dated September 4, 2001) to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," for the Davis-Besse Nuclear Power Station, Unit Number 1.

I, Guy G. Campbell, state that (1) I am Vice President - Nuclear of the FirstEnergy Nuclear Operating Company, (2) I am duly authorized to execute and file this certification on behalf of the Toledo Edison Company and The Cleveland Electric Illuminating Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

By: _____
Guy G. Campbell, Vice President - Nuclear

Affirmed and subscribed before me

_____
Notary Public, State of Ohio

S14M-05558

Supplemental Information in Response to NRC Bulletin 2001-01

The Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) submitted its response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles" in FirstEnergy Nuclear Operating Company (FENOC) letter Serial Number 2371, dated September 4, 2001. Subsequent to submittal of that letter, questions from the NRC staff have been raised. In addition, subsequent and ongoing activities have been pursued. The following provides the DBNPS response to the NRC questions and other supplemental information concerning activities by the DBNPS . This information was discussed with members of the NRC staff on October 3, 2001.

Previous Inspection Results:

In FENOC letter Serial Number 2731, the past inspections of the DBNPS Reactor Pressure Vessel (RPV) head were discussed. Supplemental information to and re-amplification of that discussion is provided in the following.

The inspections performed during the 10th, 11th, and 12th Refueling Outage (10RFO, 11RFO, and 12RFO) consisted of a visual inspection of the RPV head in accordance with the DBNPS Boric Acid Control Program pursuant to Generic Letters 88-05. The visual inspections were conducted by remote camera and included below insulation inspections of the RPV bare head such that the Control Rod Drive Mechanism (CRDM) nozzle penetrations were viewed. These inspections were videotaped, and have subsequently been reviewed with specific focus upon boric acid crystal deposits which could be indicative of CRDM nozzle penetration leakage as had been observed at the Oconee Nuclear Station, Unit 3 (ONS-3) and at Arkansas Nuclear One, Unit 1 (ANO-1). A further subsequent review corroborates the previous statements and conclusions stated in letter Serial Number 2731 that the results of this review did not identify any boric acid crystal deposits that would have been attributed to leakage from the CRDM nozzle penetrations, but were indicative of CRDM flange leakage. Included as Attachment 2 and 3 are the inspection results for each nozzle from 12RFO, supplemented with results from 11RFO as necessary, and pictorial representations of the nozzle areas, respectively.

Analytical Work Performed:

The attached Framatome Technology Incorporated (FTI) document FRA-ANP 51-5012567-01, "RV Head Nozzle and Weld Safety Assessment," is a non-proprietary updated version of a previous proprietary FTI document (51-5011603-01). This document provides results of the analysis for crack propagation and growth, and shows that postulated crack grow takes several years to manifest into a critical crack. Based on this analysis and the history presented by ONS and ANO-1, there is sufficient basis for concluding that it is acceptable for the DBNPS to continue to operate until it's next scheduled refueling outage scheduled to start in March 2002.

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As stated in the October 3, 2001, telephone conference call, the DBNPS has contracted with Structural Integrity Associates (SIA) to perform a finite element analysis of the RPV head penetrations and nozzles to verify the gaps between the penetrations and nozzles would permit leakage from any nozzle through wall or through weld cracks to be observed via boric acid crystal deposits. This plant specific stress analysis closely follows the stress analysis performed by FTI for all B&W plants which is covered in section 3 of FRA-ANP 51-5012567-01. The SIA analysis is attached and provides assurance that leakage will be visible on all but four of the sixty-nine nozzle/penetration interfaces. However, the nozzle/penetration interfaces not deemed to provide the leakage path are nozzle numbers 1, 2, 3, and 4, which are in the center of the RPV head. As stated in the telephone conversation and documented in the industry history of circumferential cracks seen to date, no leakage attributable to circumferential cracks has been observed in this area from any of the inspections conducted by other utilities, and is not considered to be the most likely source for leakage at the DBNPS. In addition, these particular nozzles had been planned to be examined by supplemental examination during 13RFO because of the masking boric acid crystal deposits which are present around these nozzle/penetration interfaces. Therefore, it is concluded, based on the verification of inspection results conducted at DBNPS, industry historical results of CDRM nozzle leakage and the conservative finite element analysis performed, that no leakage from the CRDM nozzle/head interface has previously occurred at the DBNPS.

Industry Efforts:

The DBNPS recognizes that it is susceptible to the Alloy 600 cracking phenomena. To this end and since discovery of Alloy 600 cracking at VC Summer and ONS, the DBNPS has been following activities and planning site-specific activities to assure that the Reactor Coolant System pressure boundary is maintained. These activities have included participation in industry groups that are extensively analyzing and characterizing the phenomenological attributes of the cracking issue, and developing sophisticated means of detecting and, as necessary, repairing identified cracks. The findings at other utilities are communicated among the industry in a timely manner which allows aggressive evaluation of the nature, extensiveness and implications of the cracking to ensure the issue is understood as completely as possible, and ensures the development of conservative decision making. It is through these continuing efforts that the DBNPS has concluded that operation to the 13RFO, scheduled for late March 2002, does not jeopardize the public health and safety.