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Docket Number 50-346

10 CFR 50.55a
10 CFR 50.9

License Number NPF-3

Serial Number 2990

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United States Nuclear Regulatory Commission
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Subject: Correction of Information Provided in 10 CFR 50.55a Relief Requests Regarding
American Society of Mechanical Engineers Boiler and Pressure Vessel Code Inservice
Inspection Program at the Davis-Besse Nuclear Power Station, Unit 1

Ladies and Gentlemen:

During an Extent of Condition review of prior NRC submittals for completeness and accuracy, an inaccuracy was identified with information provided in FirstEnergy Nuclear Operating Company (FENOC) letter Serial Number 2602, "Additional Information Related to Inservice Inspection Relief Request A16," dated June 17, 1999. Relief Request (RR) A16 was originally submitted by letter dated January 4, 1999 (FENOC letter Serial Number 2564), during the second ten-year Inservice Inspection (ISI) interval to request relief for the section of piping between decay heat (DH) valves DH11 and DH12 from Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 1986 Edition, No Addenda, Code Item B15.51, which requires a system hydrostatic test of Class 1 piping. Additional information related to ISI RR-A16 was submitted by letter dated June 17, 1999 (FENOC letter Serial Number 2602). RR-A16 was subsequently approved by the NRC in a Safety Evaluation dated August 13, 1999 (FENOC letter Log Number 5528).

The Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) is currently in its third ten-year ISI interval. The DBNPS Third Ten-Year ISI Program is based on the requirements of 10 CFR 50.55a(g) and the ASME Boiler and Pressure Vessel Code, Section XI, 1995 Edition and Addenda through the 1996 Addenda. A review of the Third Ten-Year ISI Program submitted on September 19, 2000 (FENOC letter Serial Number 2672), has determined that RR-A6, based on the previously approved RR-A16, also provided inaccurate information. The DBNPS Third Ten-Year ISI Program, including RR-A6, was approved by the NRC in a Safety Evaluation dated September 30, 2002 (FENOC letter Log Number 6013).

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Although FENOC does not believe that the inaccurate information provided with respect to RR-A16 and RR-A6 is material or presents a significant implication for the public health and safety or common defense and security, this letter is intended to correct the information previously provided. Attachment 1 provides a discussion of the inaccurate information. Enclosure 1 provides the corrected RR-A6 for the current ten-year ISI interval with changes denoted by revision marks in the right-hand margin.

If you have any questions or require further information, please contact Mr. Kevin L. Ostrowski, Manager – Regulatory Affairs, at (419) 321-8450.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gerald Myers".

CWS
Attachment
Enclosures

cc: Regional Administrator, NRC Region III
J. B. Hopkins, DB-1 NRC/NRR Senior Project Manager
C. S. Thomas, DB-1 NRC Senior Resident Inspector
Utility Radiological Safety Board

Correction of Information Provided in 10 CFR 50.55a Relief Requests Regarding American Society of Mechanical Engineers Boiler and Pressure Vessel Code Inservice Inspection (ISI) Program at the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS)

Background:

The FirstEnergy Nuclear Operating Company (FENOC) provided Relief Request (RR) A16 for the DBNPS in a letter dated January 4, 1999 (FENOC letter Serial Number 2564). Relief was requested from Section XI of the ASME Code, 1986 Edition, No Addenda, Code Item B 15.51, which requires a system hydrostatic test of Class 1 piping. Relief from performing the system hydrostatic test of the piping between valves DH11 and DH12 was specifically requested. FENOC proposed to perform VT-2 visual examination of this piping while the Decay Heat Removal System is in service and also perform ultrasonic and liquid penetrant examinations of the welds attaching valves DH11 and DH12 to the piping.

In response to questions from the NRC staff, FENOC provided additional information to support NRC approval of RR-A16 by letter dated June 17, 1999 (FENOC letter Serial Number 2602). The information provided in response to the NRC staff questions included the following statements:

The DHR System piping, specifically that between valves DH11 and DH12, will be maintained at a pressure above 200 psig for at least four (4) hours after valves DH11 and DH12 have been opened to satisfy the proposed alternative ISI requirements of RR-A16. The valves are normally opened and power is removed to the valve operators before reaching 260 psig during Reactor Coolant System (RCS) cooldown in order to meet Technical Specification 3.4.2 requirements for Low Temperature Overpressurization Protection. Cooling down the RCS to a temperature corresponding to less than 200 psig following opening of valves DH11 and DH12 is normally performed in conjunction with two Reactor Coolant Pumps in one loop running. The time required for the RCS to cool down to this temperature from when valves DH11 and DH12 are opened is normally in excess of six (6) hours.

The NRC approved RR-A16 in a Safety Evaluation dated August 13, 1999 (FENOC letter Log Number 5528). The information supplied by FENOC in the letter dated June 17, 1999, was included in the "Evaluation" section of the Safety Evaluation.

The DBNPS is currently in its third ten-year Inservice Inspection (ISI) interval. The Third Ten-Year ISI Program, submitted on September 19, 2000, (FENOC letter Serial Number 2672) contained RR-A6, based on the previously approved RR-A16. The justification for granting the relief provided by FENOC included the following statements:

During operation of the Decay Heat System, valves DH11 and DH12 are normally opened before the Reactor Coolant System pressure reaches 260 psig during a Reactor

Coolant System cooldown in order to meet Technical Specification 3.4.2 requirements for Low Temperature Overpressure Protection. During the cooldown, the pressure of the piping between valves DH11 and DH12 will be greater than 200 psig for at least 4 hours. This is followed by long term cooling at Decay Heat Removal pressure of approximately 45 psig.

The DBNPS Third Ten-Year ISI Program, including RR-A6, was approved by the NRC in a Safety Evaluation dated September 30, 2002 (FENOC letter Log Number 6013). The information referenced above from the September 19, 2000, letter was included in the Safety Evaluation.

Discussion:

During a review of regulatory submittals to determine the extent of condition (EOC) to address the Davis-Besse Inspection Manual Chapter 0350 Oversight Panel Restart Checklist Item 3.i, "Process for Ensuring Completeness and Accuracy of Required Records and Submittals to the NRC," potentially incomplete or inaccurate information was discovered in FENOC letter Serial Number 2602, dated June 17, 1999. The suspect information was evaluated under the FENOC 10 CFR 50, Appendix B Corrective Action Program and determined to be inaccurate.

Both Relief Request submittals referenced above stated that valves DH11 and DH12 are normally opened before the Reactor Coolant System (RCS) pressure reaches 260 psig during a RCS cooldown to meet Technical Specification 3.4.2 requirements for Low Temperature Overpressure Protection. However, a review of the Control Room Logs for the two shutdowns to Cold Shutdown prior to the submittal of the June 17, 1999, letter does not support this statement.

Technical Specification 3.4.2 requires valves DH11 and DH12 to be open in Modes 4 and 5. Therefore, valves DH11 and DH12 are required to be open prior to RCS average temperature being reduced to less than 280°F (Mode 4). The DBNPS procedure DB-OP-06903, "Plant Shutdown and Cooldown," provides direction with respect to operation of valves DH11, DH12, and the Decay Heat Removal System. Per procedure DB-OP-06903, the RCS temperature is maintained above 280°F while cooling down and depressurizing the RCS to within the limits for simultaneous Reactor Coolant Pump and Decay Heat System operation. When RCS pressure and temperature are below the maximum for Decay Heat operation, valves DH11 and DH12 may be opened. According to procedure DB-PF-06703, "Miscellaneous Operation Curves," at 280°F the allowable RCS pressure band is approximately 237 psig to approximately 260 psig. The statement provided in the Relief Requests does not accurately reflect the procedural requirements/allowances.

The additional information supporting RR-A16 also stated that cooling down the RCS to a temperature corresponding to less than 200 psig following opening of valves DH11 and DH12 is normally performed in conjunction with two Reactor Coolant Pumps in one loop running,

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and the time required for the RCS to cool down to this temperature from when valves DH11 and DH12 are opened is normally in excess of six (6) hours. However, a review of the Control Room Logs for the two shutdowns to Cold Shutdown prior to the submittal of the June 17, 1999, letter does not support these statements. According to the Control Room Logs, approximately 5 hours and 4.25 hours were necessary to cool down to a temperature less than 200 psig for the two shutdowns.

Procedure DB-OP-06903 directs the operator to take steps to stop all running Reactor Coolant Pumps when the RCS T_{HOT} is below 165°F or when steam generator cooldown rates are not meeting the Shift Manager's desired rate. The statement provided in the Relief Request does not accurately reflect the procedural requirements/allowances. This would also have a potential direct effect on the length of time necessary to cool the RCS to a temperature corresponding to less than 200 psig following opening of valves DH11 and DH12.

Summary:

The material basis for the justification of RR-A16 and RR-A6 appears to be the commitment to maintain the RCS pressure above 200 psig for at least 4 hours after valves DH11 and DH12 are opened, followed by long term cooling at a Decay Heat Removal pressure of approximately 45 psig prior to inspection to identify leakage. The statements discussed above were intended to provide additional information concerning normal operation of the DBNPS. Although the statements have been determined to be inaccurate, they are not considered to provide material information. In addition, the inaccurate statements do not present a significant implication for the public health and safety or common defense and security. Enclosure 1 provides the corrected RR-A6 for the current third ten-year ISI interval.

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Enclosure 1

**CORRECTION OF INFORMATION PROVIDED IN 10 CFR 50.55A RELIEF
REQUESTS REGARDING AMERICAN SOCIETY OF MECHANICAL
ENGINEERS BOILER AND PRESSURE VESSEL CODE INSERVICE INSPECTION
(ISI) PROGRAM AT THE DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1**

CORRECTED RELIEF REQUEST RR-A6

(4 pages follow)

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**FIRST ENERGY NUCLEAR OPERATING COMPANY
DAVIS-BESSE UNIT 1
THIRD 10-YEAR INTERVAL
RELIEF REQUEST RR-A6**

System/Component(s) for Which Relief is Requested:

ASME Class 1 Decay Heat Removal Piping between Valves DH11 and DH12

Code Requirement:

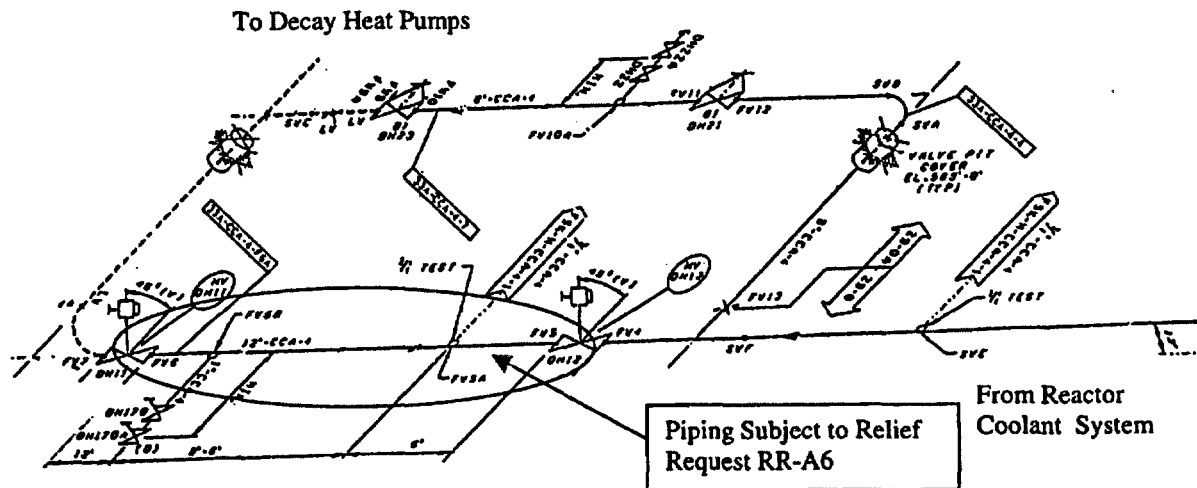
ASME Section XI, 1995 Edition, 1996 Addenda, Subsection IWB-2500, Table IWB-2500-1, Examination Category B-P, Item No. B15.50 requires a system leakage test in accordance with IWB-5220. IWB-5222(b) requires the pressure retaining boundary during the system leakage test conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary.

Code Requirement from Which Relief is Requested:

Relief is requested from performing the system leakage test at or near the end of the interval for a segment of Class 1 piping approximately 4 feet in length located between isolation valves DH11 and DH12. Valves DH11 and DH12 are installed in the normal cooldown line from the Reactor Coolant System to the Decay Heat Removal System.

Basis for Relief:

Valves DH11 and DH12 are installed in the normal cooldown line from the Reactor Coolant System to the Decay Heat Removal System. DH12 is the first isolation valve off of the Reactor Coolant System while DH11 is the second isolation valve. The ASME Class 1 boundary extends through DH12 to DH11. The piping between DH11 and DH12 is a four foot section of 12 inch seamless schedule 140 piping with a 1 inch drain line and a ¾ inch by-pass line around DH12. Two 12-inch pipe welds, which connect the piping to the valves, are the only large bore welds within the boundary. This piping is installed within a watertight enclosure (Decay Heat Pit) which protects DH11 and DH12 from flooding following a Loss of Coolant Accident (LOCA).



Valves DH11 and DH12 are motor operated gate valves with flexible wedges. NRC Information Notice 92-26 "Pressure Locking of Motor Operated Flexible Wedge Gate Valves" provides information regarding flexible wedge gate valves which may be subject to pressure locking under certain operating conditions. FENOC's evaluation of this Information Notice identified that DH11 and DH12 were susceptible to pressure locking. Subsequently, DH11 and DH12 were modified by drilling a small vent hole in the upstream disc of each valve's wedge to eliminate the pressure locking concern.

The required system leakage test pressure of the piping between DH11 and DH12 is 2155 psig. During the eleventh refueling outage, the piping between DH11 and DH12 was pressurized during Mode 5 to determine if this test pressure could be achieved. At 800 psig, the pressure locking vent hole allowed leakage past the DH12 upstream disc. This confirmed that in order to perform the system leakage test of the piping between DH11 and DH12, the Reactor Coolant System must be pressurized to prevent flexing of the DH12 wedge. Compliance with the pressure/temperature limits of Davis-Besse Nuclear Power Station (DBNPS) Technical Specification 3.4.9.1 requires the plant enter Mode 3 prior to attaining the Reactor Coolant System pressure of 2155 psig required to perform the system leakage test.

Three options are available to perform the system leakage test of the piping between valves DH11 and DH12.

Option one is to open valve DH12 while in Mode 3 at full temperature and pressure to pressurize the piping between DH11 and DH12 to 2155 psig. The piping could then be examined remotely through the Decay Heat Pit Inspection Port. Opening DH12 while in Mode 3 is not considered viable as Technical Specification 3.5.2 prohibits DH11 or DH12 from being open when the Reactor Coolant System pressure is greater

than 328 psig. Therefore, DH12 may not be opened to pressurize the piping during the normal Reactor Coolant System hydrostatic test.

The second option requires entry into the Decay Heat Pit while in Mode 3 with the Reactor Coolant System at full temperature and pressure to pressurize the piping between DH11 and DH12 with a hydrostatic pump. Entering the Decay Heat Pit while in Mode 3 requires removal of the Decay Heat Pit cover to provide access to the Decay Heat Pit with the Reactor Coolant System at full temperature (532°F) and pressure (2155 psig). The system leakage test would be performed by pressurizing the piping between DH11 and DH12 with a hydrostatic pump to obtain the required test pressure. Technical Specification 3.5.2 requires the Decay Heat Pit be sealed and closed in Modes 1, 2, and 3. Opening this pit in Mode 3 requires an intentional entry in Technical Specification 3.0.3 as it would make both Low Pressure Injection pumps inoperable. As Technical Specification 3.0.3 is not intended to be used as an operational convenience to permit redundant safety systems to be out of service, this is not an acceptable option.

FENOC considers these two options a hardship and a detriment to the quality and safety of the Reactor Coolant System.

The third option requires the reactor vessel to be defueled and the RCS drained down to disassemble DH12 and perform a temporary modification to the disk to establish test conditions. FENOC considers this option to be a hardship and unusually difficult without a compensatory increase in the level of quality and safety.

Relief is requested pursuant to 10 CFR 50.55a(a)(3)(ii). Testing of the piping between DH11 and DH12 during the system leakage test would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. A relief request for this piping between DH11 and DH12 was previously approved for the Second 10-Year Interval in Relief Request RR-A16 (TAC No. MA4549).

Alternative Examination:

The required system leakage test pressure for the piping between DH11 and DH12 is 2155 psig. In lieu of the system leakage test at the required pressure, the segment of piping between DH11 and DH12 will be VT-2 examined, with the insulation removed, for boric acid residue which would be indicative of leakage. The piping will have undergone a 4-hour hold at greater than 200 psig and several days of operation at Decay Heat Removal pressures (approximately 45 psig). Since the Decay Heat System contains borated water, any pressure boundary leak would be identified by the formation of boric acid crystals at the location of leakage.

As noted above, the piping between DH11 and DH12 is a four foot section of seamless piping connected to DH11 and DH12 by field welds. In addition to the

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VT-2 examination, each of these 2 field welds will be subjected to a surface examination and a volumetric examination during each Inservice Inspection Interval. The volumetric examination is a limited examination as the valve taper prevents ultrasonic scanning from the valve side.

Justification for the Granting of Relief:

Based on the requirements of the Technical Specifications, the system leakage test of the segment of piping between valves DH11 and DH12 would require the Reactor Vessel be defueled and the Reactor Coolant System drained below the level of valve DH12 to perform the necessary modification to the valve disk prior to pressurizing.

The piping between valves DH11 and DH12 is a 4-foot section of seamless stainless steel pipe. Both pressure boundary welds between the valves and the section of pipe will be subjected to a limited volumetric examination and a surface examination in accordance with the ASME Code, Section XI. Although this is a limited examination, examination in three of the four required examination directions should detect any flaw propagating through the weld. The absence of any detectable flaws will provide assurance of the structural integrity of the welds.

During operation of the Decay Heat System, valves DH11 and DH12 are required to be opened before the Reactor Coolant System average temperature is less than 280°F (by procedure, this is typically at a pressure between approximately 260 psig and approximately 237 psig) during a Reactor Coolant System cooldown in order to meet Technical Specification 3.4.2 requirements for Low Temperature Overpressure Protection. During the cooldown, the pressure of the piping between valves DH11 and DH12 will be greater than 200 psig for at least 4 hours. This is followed by long term cooling at Decay Heat Removal pressure of approximately 45 psig.

Since the Decay Heat System contains borated water of the Reactor Coolant System, leakage occurring from the section of piping between DH11 and DH12 will be evident from boric acid residue observed during walkdown of the piping.

The inservice examination of the welds will verify the structural integrity of the piping and the walkdown of the piping for evidence of boric acid will verify the leak-integrity of the piping.

Implementation Schedule:

The examination of the piping welds to DH11 and DH12 will be scheduled to meet the requirements of Table IWB-2412-1. The walkdown of the piping for evidence of boric acid residue will be performed at or near the end of the Inspection Interval.

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COMMITMENT LIST

THE FOLLOWING LIST IDENTIFIES THOSE ACTIONS COMMITTED TO BY THE DAVIS-BESSE NUCLEAR POWER STATION (DBNPS) IN THIS DOCUMENT. ANY OTHER ACTIONS DISCUSSED IN THE SUBMITTAL REPRESENT INTENDED OR PLANNED ACTIONS BY THE DBNPS. THEY ARE DESCRIBED ONLY FOR INFORMATION AND ARE NOT REGULATORY COMMITMENTS. PLEASE NOTIFY THE MANAGER – REGULATORY AFFAIRS (419-321-8450) AT THE DBNPS OF ANY QUESTIONS REGARDING THIS DOCUMENT OR ANY ASSOCIATED REGULATORY COMMITMENTS.

COMMITMENTS	DUE DATE
In lieu of the system leakage test at the required pressure, the segment of piping between DH11 and DH12 will be VT-2 examined, with the insulation removed, for boric acid residue which would be indicative of leakage. The piping will have undergone a 4-hour hold at greater than 200 psig and several days of operation at Decay Heat Removal pressures (approximately 45 psig). In addition to the VT-2 examination, each of these 2 field welds will be subjected to a surface examination and a volumetric examination during each Inservice Inspection Interval. (See FENOC letter Serial Number 2672)	Complete (See Third Ten-Year ISI Program)
During the cooldown, the pressure of the piping between valves DH11 and DH12 will be greater than 200 psig for at least 4 hours. (See FENOC letter Serial Number 2672)	Complete (See procedure DB-OP-06903, Step 6.14.14)