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Docket Number 50-346

10 CFR 50.55a

License Number NPF-3

Serial Number 2969

August 11, 2003

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: 10 CFR 50.55a Request RV-3 Regarding American Society of Mechanical Engineers  
Code for Operation and Maintenance (OM) of Nuclear Power Plants Inservice Testing  
Requirement at the Davis-Besse Nuclear Power Station, Unit 1

Ladies and Gentlemen:

The Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) is currently in its third ten-year inservice testing (IST) interval. The DBNPS IST Program is based on the requirements of 10 CFR 50.55a(f) and the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance (OM) of Nuclear Power Plants, 1995 Edition with 1996 Addenda. This letter provides a new 10 CFR 50.55a relief request related to conformance with certain Code requirements. Specifically, the attached 10 CFR 50.55a relief request RV-3 describes an inservice testing impracticality with respect to the Reactor Coolant System pilot-operated relief valve.

A similar Relief Request, RV-1, for the Reactor Coolant System was submitted for the Davis-Besse Nuclear Power Station Second Ten-Year Inservice Test Program by letter dated August 28, 1990, (letter Serial Number 1838) and approved by the NRC in a Safety Evaluation dated December 2, 1991 (TAC No. M76025, DBNPS letter Log Number 3643).

NRC review and approval of the attached 10 CFR 50.55a relief request RV-3 is requested by February 28, 2004, for incorporation into the DBNPS IST Program.

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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,



CWS  
Attachments

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

**10 CFR 50.55a Request Number RV-3**

**Relief Requested  
In Accordance with 10 CFR 50.55a(f)(5)(iii)**

**– Inservice Testing Impracticality –**

**1. ASME Code Components Affected**

The Reactor Coolant System Pressurizer Pilot-Operated Relief Valve (PORV), RC2A, is an electrically controlled, pilot-operated, pressure-loaded relief valve with no external valve position indication. The PORV is an American Society of Mechanical Engineers (ASME) Class 1, Category B valve located inside containment. The control room indication is based on the electrical demand signal to the solenoid-operated pilot valve. The other means of relative PORV position indication are downstream tailpipe temperature indication and acoustic monitors. This valve must be capable of opening to provide a Reactor Coolant System vent path and must fail closed.

**2. Applicable Code Edition and Addenda**

ASME Code for Operation and Maintenance (OM) of Nuclear Power Plants-1995  
Edition, 1996 Addenda

**3. Applicable Code Requirement**

Relief is requested from the following ASME OM Code requirements for inservice testing of valves (Subsection ISTC):

ISTC 4.2.4(a)-The limiting value(s) of full-stroke time of each power-operated valve shall be specified by the Owner.

ISTC 4.2.4(b)-The stroke time of all power-operated valves shall be measured to the nearest second.

ISTC 4.2.8-Test results shall be compared to the initial reference values or reference values established in accordance with ISTC 3.4 and ISTC 3.5.

ISTC 4.2.8(b)-Other power-operated valves with reference stroke times of greater than 10 sec shall exhibit no more than a  $\pm 25\%$  change in stroke time when compared to the reference value.

ISTC 4.2.8(d)-Other power-operated valves with reference stroke times of less than or equal to 10 sec shall exhibit no more than a  $\pm 50\%$  change in stroke time when compared to the reference value.

ISTC 4.2.9(a)-If a valve fails to exhibit the required change of obturator position or exceeds the limiting values of full-stroke time [see paragraph ISTC 4.2.4(a)], the valve shall be immediately declared inoperable.

ISTC 4.2.9(b)-Valves with measured stroke times that do not meet the acceptance criteria of paragraph ISTC 4.2.8 shall be immediately retested or declared inoperable. If the valve is retested and the second set of data also does not meet the acceptance criteria, the data shall be analyzed within 96 hr to verify that the new stroke time represents acceptable valve operation, or the valve shall be declared inoperable. If the second set of data meets the acceptance criteria, the cause of the initial deviation shall be analyzed and the results documented in the record of tests (see paragraph ISTC 6.3).

#### **4. Impracticality of Compliance**

In accordance with 10 CFR 50.55a(f)(5)(iii), relief is requested on the basis that the required testing is impractical.

The PORV is an electrically controlled, pilot-operated, pressure-loaded relief valve. Full stroking and timing cannot be visually verified since the valve mechanisms are internal to the valve. The only available remote position indication for this valve does not indicate true valve position. Therefore, full stroke timing and the establishment of conventional stroke-time reference values cannot be performed.

#### **5. Burden Caused by Compliance**

Compliance with the Code requirements would require changing the plant design to modify or replace the existing PORV to allow full-stroke timing.

#### **6. Proposed Alternative and Basis for Use**

Relief is requested from the above cited requirements to stroke-time the PORV and to establish and maintain reference stroke times for the PORV. As an alternative, the PORV will be exercised at reduced pressure during plant shutdown on a cold shutdown frequency. PORV isolation block valve RC11 will be open during this test. Full stroke exercising of the PORV will be demonstrated by opening the valve at a specified Reactor Coolant System (RCS) pressure and recording the amount of time to achieve a certain RCS pressure drop. The time required to achieve this pressure drop is dependent upon the obtained flow rate, which is related to valve position. Therefore, the recorded time can be used for trending purposes to monitor PORV performance. A reference value will be established based upon a pressure change over a period of time. Acceptance criteria

based upon this reference value will be defined and results trended to identify valve degradation.

This proposed alternative will provide reasonable assurance that the PORV will be operationally ready.

Testing will also be performed to further demonstrate the relative position of the PORV as indicated by acoustic monitors on the PORV discharge line and their associated computer point, as well as a computer point that monitors the tailpiece temperature of the PORV discharge piping. Additionally, channel checks and calibrations are performed as required to fulfill Operating License Technical Specification Surveillance Requirements 4.3.3.6 (Post-Accident Monitoring Instrumentation) and 4.4.3 (Safety Valves and Pilot Operated Relief Valves – Operating).

In conclusion, the proposed alternative of exercising the PORV at reduced pressure during plant shutdown on a cold shutdown frequency measuring the RCS pressure drop and time is a reasonable alternative to the OM Code requirements cited above.

**7. Duration of Proposed Alternative**

Relief is requested for the duration of the Third Ten-Year Inservice Test Interval.

**8. Precedents**

A similar Relief Request, RV-1, for the Reactor Coolant System was submitted for the Davis-Besse Nuclear Power Station Second Ten-Year Inservice Test Program by letter dated August 28, 1990, (letter Serial Number 1838) and approved by the NRC in a Safety Evaluation dated December 2, 1991 (TAC No. M76025, DBNPS letter Log Number 3643).

**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
The PORV will be exercised at reduced pressure during plant shutdown on a cold shutdown frequency. PORV isolation block valve RC11 will be open during this test. Full stroke exercising of the PORV will be demonstrated by opening the valve at a specified Reactor Coolant System (RCS) pressure and recording the amount of time to achieve a certain RCS pressure drop.	Cold Shutdown frequency per Third Ten-Year IST Program requirements
A reference value will be established based upon a pressure change over a period of time. Acceptance criteria based upon this reference value will be defined and results trended to identify valve degradation.	Cold Shutdown frequency per Third Ten-Year IST Program requirements
Testing will also be performed to further demonstrate the relative position of the PORV as indicated by acoustic monitors on the PORV discharge line and their associated computer point, as well as a computer point that monitors the tailpiece temperature of the PORV discharge piping.	Cold Shutdown frequency per Third Ten-Year IST Program requirements