

RS-07-158

10 CFR 50.55a

November 16, 2007

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

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Subject: Request for Relief from the ASME OM Code for the Third Inservice Testing Interval (RV-1)

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph 10 CFR 50.55a(a)(3)(i), Exelon Generation Company, LLC (EGC), requests NRC approval of a relief request for the Third Ten-Year Inservice Testing (IST) Program. The relief request is a proposed alternative for the test frequency of the containment recirculation sump isolation valves to the American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) 2001 Edition through 2003 Addenda for Braidwood Station, Units 1 and 2. The details for the 10 CFR 50.55a request are attached.

EGC requests approval of this request by July 29, 2008 to coincide with the start of the IST interval, which will begin on July 29, 2008 and end on July 28, 2018. If you have any questions, please contact Mr. David Chrzanowski at (630) 657-2816.

Respectfully,


Jeffrey L. Hansen
Manager - Licensing

Attachment - Third Inservice Testing Interval Relief Request (RV-1)

**10 CFR 50.55a Relief Request RV-1
Containment Recirculation Sump Isolation Valve Test Frequency
Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)
Alternative Provides Acceptable Level of Quality and Safety**

1. ASME Code Component(s) Affected

Valve Number	Description	Category	Code Class
1SI8811A	Containment recirculation sump 1A isolation motor operated valve (MOV)	B	2
1SI8811B	Containment recirculation sump 1B isolation MOV	B	2
2SI8811A	Containment recirculation sump 2A isolation MOV	B	2
2SI8811B	Containment recirculation sump 2B isolation MOV	B	2

2. Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

3. Applicable Code Requirement

ISTC-3510, "Exercising Test Frequency"

4. Reason for Request

In accordance with 10 CFR 50.55a, "Codes and standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTC-3510. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The 1/2SI8811A/B valves provide an isolation boundary between the suction of the residual heat removal (RH) and containment spray (CS) pumps, and the containment recirculation sumps. Under normal plant operating conditions, the RH and CS systems are filled with borated water and the containment recirculation sumps are maintained in a dry state.

A stroke test of these valves requires the RH and CS pumps for a given train to be removed from service and the suction lines drained to prevent water flow from the refueling water storage tank (RWST) and associated system piping into the normally empty containment recirculation sump. It takes approximately 24 hours to drain the RH and CS systems, perform the required valve tests, and refill and restore the systems to their normal configuration. An estimated 600 gallons of radioactive, borated water are drained and must be processed by the radioactive waste systems.

This same amount of borated water must be used to refill the system. This sequence of events is required whether the testing is done online or

10 CFR 50.55a Relief Request RV-1
Containment Recirculation Sump Isolation Valve Test Frequency
(Continued)

during a refueling outage. In addition, the testing process will render a train of RH and CS inoperable for a period of 24 hours each quarter. Based upon the complexity of the actions that are required to stroke test the valves, as well as the impact upon plant configuration and risk associated with the concurrent inoperability of an RH and CS train, it is not practical during operation or cold shutdowns to perform these activities on a quarterly frequency.

American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants, 2001 Edition through 2003 Addenda (i.e., ASME OM Code), Section ISTC-3521, "Category A and Category B Valves," paragraph (e) states: "if exercising is not practicable at power or cold shutdowns, it may be limited to full-stroke during refueling outages." The complicated nature of testing these valves during operation provides justification to implement an extended test frequency of once per refueling outage. It is not desirable to increase the overall system/train out of service time.

Therefore, It is not practical to exercise test these valves during normal plant operation or during cold shutdowns. In addition, due to improved planning, scheduling and execution of work, it may be prudent to exercise these valves at a time outside of refueling outages. Braidwood Station will exercise and stroke time these valves once per refueling cycle. The proposed once per cycle test frequency is not provided by ISTC-3510 or by ISTC-3520, "Exercising Requirements."

5. Proposed Alternative and Basis for Use

The availability of the RH and CS systems can be optimized, by performing the full-stroke tests of the containment recirculation sump valves during scheduled work windows for the RH and CS systems. Due to improvements in the logistics of planning and executing work, some maintenance of the RH system is performed on line (i.e., Mode 1). At other times, the nature of the maintenance to be performed requires that the maintenance be performed during a refueling outage. Considerations, which impact when this work is performed, include the scope of the work on the system, the scheduling of work windows in the planning process, system availability requirements, personnel resources, and maintenance of an acceptable risk profile.

The history of both the maintenance and inservice testing (IST) for all four of these valves at Braidwood Station as well as the four valves at Byron Station indicates good material condition and acceptable test results (i.e., stroke times).

10 CFR 50.55a Relief Request RV-1
Containment Recirculation Sump Isolation Valve Test Frequency
(Continued)

This testing history also demonstrates an acceptable level of quality and safety for an extended test frequency of once per refueling outage, relative to the quarterly frequency.

In order to minimize the number of drain/refill evolutions and the processing of radioactive, borated water described previously, it is advantageous to perform the containment recirculation sump valve exercise and stroke time tests during the same drain and refill evolution used to perform system maintenance.

Based upon the guidance provided in the ASME OM Code, Section ISTC-3521, and the duration of a normal refueling cycle at Braidwood Station, Exelon Generation Company, LLC has requested an alternate test frequency of once per refueling cycle for the containment recirculation sump isolation valves (i.e., once every 18 months with a 25% allowance, as opposed to once per refueling outage). Since Braidwood Station operates on an 18-month fuel cycle, the refueling outages are approximately 18 months apart. An 18-month frequency, with a 25% allowance for scheduling flexibility provides the same level of quality and safety as once per refueling outage. In addition, the 18-month frequency, with a 25% allowance, will enable Braidwood Station to optimize the availability of the RH and CS systems by scheduling the stroke tests concurrent with other plant activities.

Consistent with Reference 2, the following modification is being included in this request. Performing the exercise stroke time test of the valves online at an 18-month frequency (with a 25 percent allowance for flexibility in scheduling) during RH system maintenance work windows when the RH pump suction piping is drained will reduce overall system/train out of service time and, thus, will provide an acceptable level of quality and safety. If there is not an online RH system maintenance work window that requires the RH pump suction piping to be drained, then the exercise and stroke time testing must continue to be tested during refueling outages (preferably when RH requirements are minimal).

In conclusion, due to the unique requirement of having to drain and fill the suction line associated with the containment recirculation sump valves to perform the stroke time and exercise test, it is not appropriate to test these valves at a quarterly frequency. As maintenance on the RH system often times requires the same suction line to be drained and filled, and many of these maintenance activities can now be performed on line, it is not appropriate to restrict the testing of these valves to a cold shutdown or refueling outage. This will be done when there is already an online RH system maintenance work window that requires the RH pump suction piping to be drained. It is not desirable to increase the overall system/train out of service time. An equivalent level of quality and safety would be

10 CFR 50.55a Relief Request RV-1
Containment Recirculation Sump Isolation Valve Test Frequency
(Continued)

provided by testing these valves at an 18-month frequency with a 25% allowance for flexibility in scheduling.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire third 120-month interval.

7. Precedents

1. Letter from A. J. Mendiola (U. S. NRC) to J. L. Skolds (Exelon Generation Company, LLC), "Relief Request RV-5 for Braidwood Station, Units 1 and 2, and Relief Request RV-9 for Byron Station, Units 1 and 2 Alternative Testing of Containment Sump Suction Valves for the Second 10-Year Inservice Testing (IST) Interval," dated February 28, 2003
2. Letter from D. S. Collins (U. S. NRC) to C. M. Crane (Exelon Generation Company, LLC), "Byron Station, Units Nos. 1 and 2 – Evaluation of Relief Requests from the Requirements of ASME OM Code for the Third Inservice Test Interval," dated September 7, 2006