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Nuclear
10 CFR 50.55a

RS-02-156

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D.C. 20555-0001

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

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. 50-454 and 50-455

Subject: Relief Request for Alternative Testing of Containment Sump Suction Valves 1/2SI8811A/B

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(i), Exelon Generation Company, LLC (Exelon) is requesting NRC approval of a proposed alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," ASME/ANSI OMa-1988, "Operations and Maintenance of Nuclear Power Plants," 1987 Edition through the 1988 Addenda, Part 10, Section 4.2.1.1 for the Braidwood and Byron Stations.

ASME/ANSI OMa-1988, Part 10, Section 4.2.1.1, requires Category A and B valves to be tested nominally every 3 months (i.e., quarterly), unless the conditions provided by Section 4.2.1.2 are used to justify an alternate test frequency. Relief Requests RV-5 for Braidwood Station and RV-9 for Byron Station propose to allow testing of the containment sump recirculation suction valves, without restriction on plant operating mode, while maintaining an 18-month testing frequency. This will optimize the availability and maintenance of the residual heat removal (RH) and containment spray (CS) systems by performing the full-stroke tests of these valves during scheduled work windows for these systems. This alternative test frequency will provide an equivalent level of quality and safety.

This proposed alternative is for the second ten-year Inservice Testing intervals for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2. For Braidwood Station, the second interval began on July 29, 1998, and will end on July 28, 2008. For Byron Station, the interval began on July 1, 1996, and will end on June 30, 2006.

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The Braidwood Station, Unit 1 containment recirculation sump valves are currently scheduled to be full-stroke tested during plant operations. Testing of the 1SI8811A valve is scheduled for December 2002, and testing of the 1SI8811B valve is scheduled for January 2003. If the NRC approves the proposed relief requests, we plan to credit these tests for meeting the full-stroke test requirement. A refueling outage for Braidwood Station, Unit 1 is scheduled for April 2003. We are requesting NRC approval of the proposed relief requests by March 1, 2003, so that the outage scope and plans can be finalized sufficiently in advance of the start of the outage.

Should you have any questions concerning this matter, please contact Mr. Don Cecchett at (630) 657-2826.

Respectfully,

Keith R. Jury

Keith R. Jury
Director - Licensing
Mid-West Regional Operating Group

Attachment: Relief Request RV-5 (Braidwood Station) and RV-9 (Byron Station)

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station

ATTACHMENT

BRAIDWOOD STATION RELIEF REQUEST RV-5
BYRON STATION RELIEF REQUEST RV-9

TITLE: 18-Month Frequency Test of 1/2SI8811A/B

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1SI8811A	B	2	M-61-4	C-5
1SI8811B	B	2	M-61-4	A-5
2SI8811A	B	2	M-136-4	C-5
2SI8811B	B	2	M-136-4	A-5

FUNCTION(S):

These motor operated valves are the containment recirculation sump outlet isolation valves. These valves are opened or closed to control the flowpath from the containment recirculation sump to the residual heat removal (RH) and containment spray (CS) pumps.

CODE REQUIREMENT(S):

ASME/ANSI OMa-1988, "Operations and Maintenance of Nuclear Power Plants," 1987 Edition through the 1988 Addenda, Part 10, Section 4.2.1.1, requires Category A and B valves to be tested nominally every 3 months (i.e., quarterly), except as provided by Section 4.2.1.2.

Section 4.2.1.2 indicates that valves shall be tested as follows:

"(a) full-stroke during plant operation to the position(s) required to fulfill its function(s);

(b) if full-stroke exercising during plant operation is not practicable, it may be limited to part-stroke during plant operation and full-stroke during cold shutdowns;

(c) if exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;

(d) if exercising is not practicable during plant operation and full-stroke during cold shutdowns is also not practicable, it may be limited to part-stroke during cold shutdowns, and full-stroke during refueling outages;

(e) if exercising is not practicable during plant operation or cold shutdowns, it may be limited to full-stroke during refueling outages.

(f) valves full-stroke exercised at cold shutdowns shall be exercised during each cold shutdown, except as specified in (g) below. Such exercise is not required if the time period since the previous full-stroke exercise is less than 3 months.

(g) valve exercising during cold shutdown shall commence within 48 hr of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hr provided all valves required to be tested during cold shutdown will be tested prior to plant startup. However, it is not the intent of this Part to keep the plant in cold shutdown in order to complete cold shutdown testing.

(h) all valve testing required to be performed during a refueling outage shall be completed prior to returning the plant to operation."

CURRENT TEST REQUIREMENTS

These valves are currently exercised and stroke time tested during refueling outages in accordance with ASME/ANSI OMa-1988, Part 10, Section 4.2.1.2(e). We previously determined it was not practicable to exercise the valves quarterly during plant operation or cold shutdown.

PROPOSED ALTERNATIVE TESTING:

Relief is being requested from the requirements of ASME/ANSI OMa-1988, Part 10, Section 4.2.1.1 and Section 4.2.1.2 for the exercise and stroke time testing of valves 1/2SI8811A and 1/2SI8811B. The proposed alternative test is to exercise and stroke time the 1/2SI8811A and 1/2SI8811B valves once per fuel cycle (i.e., currently 18 months) regardless of plant mode, with a 25% allowance for flexibility in scheduling. This relief is requested in accordance with 10 CFR 50.55a(a)(3)(i) where proposed alternatives to the specified Code requirements may be approved by the NRC when it has been demonstrated that the proposed alternatives would provide an acceptable level of quality and safety.

BASES FOR RELIEF:

The 1/2SI8811A/B valves provide an isolation boundary between the suctions 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 during a refueling outage.

It is impractical to perform these required drain/refill and associated activities on a quarterly frequency.

The valves are currently exercised and stroke timed during refueling outages, in accordance with ASME/ANSI OMa-1988, Part 10, Section 4.2.1.2(e). The history of both the maintenance and in-service testing (IST) for all eight of these valves at Braidwood and Byron show good material condition and that testing is consistent with acceptable stroke times, demonstrating that an acceptable level of quality and safety is maintained with an 18-month test frequency.

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. 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.

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 impractical 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 impractical to restrict the testing of these valves to a cold shutdown or refueling outage. An equivalent level of quality and safety would be provided by testing these valves at an 18-month frequency with a 25% allowance for flexibility in scheduling.