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RS-03-037

February 14, 2003

10 CFR 50.55a

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

SUBJECT: Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

Pursuant to 10 CFR 50.55a, "Codes and standards." paragraph (a)(3)(i), AmerGen Energy Company (AmerGen), LLC, hereby requests NRC approval of a request for 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, Sections 4.2.1.1 and 4.2.1.2 for Clinton Power Station (CPS).

ASME/ANSI OMa-1988, Part 10, Section 4.2.1.1, requires Category A and B valves to be tested nominally every three months (i.e., quarterly), unless the conditions specified by Section 4.2.1.2 are used to justify an alternate testing frequency. This request proposes to allow testing of Shutdown Service Water (SX) System valves without restriction on plant operating mode, while maintaining an 18-month testing frequency. This will optimize the availability and maintenance of the SX system by performing the full-stroke tests of these valves once per fuel cycle during scheduled work windows for this system. The proposed alternative testing will provide an equivalent level of quality and safety.

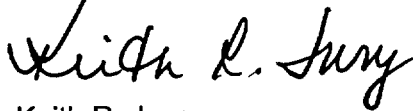
The subject valves are currently tested once per refueling outage and are currently planned to be tested during the next CPS refueling outage (C1R09), scheduled for February 2004. Upon approval of the proposed alternative testing, the next performance of the test will be in a scheduled maintenance outage. We are requesting approval of this proposed request by November 30, 2003, so that planning for the next refueling outage can be finalized sufficiently in advance of the start of the outage, scheduled for February 2004.

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February 14, 2003
U. S. Nuclear Regulatory Commission
Page 2

If you have any questions concerning this matter, please contact Mr. Tim Byam at (630) 657-2804.

Respectfully,

A handwritten signature in black ink that reads "Keith R. Jury". The signature is written in a cursive style with a large initial "K".

Keith R. Jury
Director – Licensing
Mid-West Regional Operating Group
AmerGen Energy Company, LLC

Attachment: 10CFR50.55a Request Number 2206

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station

ATTACHMENT
Clinton Power Station
10 CFR 50.55a Request Number 2206
Page 1 of 4

Proposed Alternative In Accordance With 10 CFR 50.55a(a)(3)(i)

1. ASME Code Components Affected

Components:	1SX012A, 1SX012B, 1SX062A, 1SX062B
Description:	Shutdown Service Water (SX) Supply to Fuel Pool Cooling Heat Exchanger Isolation Valves
Components:	1SX016A, 1SX016B
Description:	SX Emergency Makeup Valves to Spent Fuel Pool
Components:	1SX071A, 1SX071B, 1SX073A, 1SX073B, 1SX074A, 1SX074B, 1SX076A, 1SX076B, 1SX105A, 1SX105B, 1SX107A, 1SX107B
Description:	SX Deluge Valves to Standby Gas Treatment System and Main Control Room Ventilation System Charcoal Adsorber Beds

2. Applicable Code Edition and Addenda

ASME/ANSI OMa-1988, "Operations and Maintenance of Nuclear Power Plants," 1987 Edition through the 1988 Addenda

3. Applicable Code Requirement

ASME/ANSI OMa-1988, Part 10, Section 4.2.1.1, requires Category A and B valves to be tested nominally every three 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.

ATTACHMENT
Clinton Power Station
10 CFR 50.55a Request Number 2206
Page 2 of 4

(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 three months.

(g) Valve exercising during cold shutdown shall commence within 48 hours 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 hours 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.

4. Reason for Request

Valves 1SX012A, 1SX012B, 1SX062A, and 1SX062B are the backup cooling water supply isolation valves to the fuel pool cooling and cleanup (FC) system heat exchangers. They isolate the FC heat exchangers from the SX system. Stroke testing of these valves admits raw lake water into the component cooling water (CC) system side of the FC heat exchangers. After the valves are stroked, the heat exchanger must be removed from service, flushed, and sampled to ensure the CC system has not become contaminated by the lake water. Introduction of lake water into the FC heat exchanger through operation of the subject valves will also tend to increase the extent of tube fouling and microbiologically induced corrosion. The potential to introduce raw lake water into the CC system presents a hardship in testing these valves on a quarterly basis due to the strict chemistry controls and the associated costs to maintain the water quality. For these reasons, AmerGen currently tests these valves on a cold shutdown frequency.

Valves 1SX016A and 1SX016B are the emergency makeup water valves to the spent fuel pool. These valves allow for emergency makeup of lake water to the spent fuel pool via the SX system. During normal operation and cold shutdown conditions, the portion of the SX system upstream of these valves is under pressure from the plant service water (WS) system. Cycling the valves will introduce raw lake water into the spent fuel pool. To prevent this from occurring during testing, plant test procedures involve installing a blank flange at the normally open, flanged end of the makeup pipe; filling the void section of pipe between these valves and the blank flange; and cycling the valve. After completion of the valve stroking, the section of piping between the valves and the blank flange must be drained, the blank flange must be removed, and the valves must be verified as watertight. The installation of a temporary modification and potential introduction of raw lake water into the spent fuel pool during testing represents a hardship on the basis of the strict chemistry controls and the associated costs to maintain the water quality of the spent fuel pool. For these reasons, AmerGen currently tests these valves on a refueling frequency.

ATTACHMENT
Clinton Power Station
10 CFR 50.55a Request Number 2206
Page 3 of 4

Valves 1SX071A, 1SX071B, 1SX073A, 1SX073B, 1SX074A, 1SX074B, 1SX076A, 1SX076B, 1SX105A, 1SX105B, 1SX107A, and 1SX107B are used to supply deluge water to the charcoal adsorber beds in the standby gas treatment system and main control room ventilation filter trains from either the fire protection system or the SX system. Both of these systems are pressurized during all operating conditions. Exercising these valves with the respective header pressurized would inject raw water into the charcoal beds, rendering the associated ventilation train inoperable and requiring replacement of the charcoal. The time and associated costs to replace the charcoal require additional controls to be put into place during testing. To prevent injection of raw water into the charcoal beds, a spool piece must be removed. Due to the hardships associated with this activity, AmerGen currently performs this testing on a refueling frequency.

5. Proposed Alternative and Basis for Use

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).

Proposed alternative testing 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 the affected SX valves. The proposed alternative test is to allow the option to exercise and stroke time test the valves once per fuel cycle (i.e., currently 18 months) regardless of plant mode, with a 25% allowance for flexibility in scheduling. This proposed alternative testing 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.

All of the valves within the scope of this request 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). The history of both the maintenance and in-service testing (IST) for all valves 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 a once-per-cycle test frequency.

The availability of the SX system (and emergency core cooling systems) can be optimized by performing the full-stroke tests of the valves in scheduled work windows during each operating cycle. Due to improvements in the logistics of planning and executing work, and due to maintaining a high availability of the system during both operating and shutdown conditions, it is often desirable to perform planned maintenance and testing of the SX system with the unit on-line (i.e., Mode 1). At other times, particularly if the maintenance requires the system to be out of service greater than the outage time allowed by plant Technical Specifications, the nature of the maintenance to be performed requires that the maintenance be performed during a refueling outage. Regardless, it is desirable to allow the option of testing these valves, either during a planned maintenance

ATTACHMENT
Clinton Power Station
10 CFR 50.55a Request Number 2206
Page 4 of 4

outage with the unit online, or during a refueling outage. Considerations that 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. Although the burden of testing the valves quarterly is excessive, an on-line system outage, if properly planned and executed, will provide the least overall plant impact and will minimize overall system unavailability while maintaining an acceptable risk profile.

Due to the unique configuration and system interrelationships associated with each of the SX valves in this discussion, it is impractical to test these valves at a quarterly frequency. Therefore, AmerGen currently tests these valves during refueling frequencies. However, for Clinton Power Station to achieve maximum overall plant risk minimization, reduced system unavailability, and optimized outage scheduling, it may be necessary to perform SX system maintenance and testing during on-line work windows rather than during refueling outages. Having the option to test these valves during a planned maintenance outage, whether on line or during a refueling outage, provides an equivalent level of quality and safety.

6. Duration of Proposed Alternative

The duration of the proposed alternative testing would be effective for the Second 10-year IST Program, which began on January 1, 2001 and ends on December 31, 2009.

7. Precedents

A similar request has been submitted by Exelon Generation Company (Exelon) for the Byron and Braidwood Stations (Reference 1).

8. References

1. Letter RS-02-156 from K. Jury (Exelon) to U.S. NRC, "Relief Request for Alternative Testing of Containment Sump Suction Valves 1/2SI8811A/B," dated October 18, 2002