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RS-03-188

October 2, 2003

10 CFR 50.55a

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

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

Subject: Supplemental Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

- References:**
- (1) Letter from K. R. Jury (AmerGen Energy Company, LLC) to U.S. NRC, "Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program," dated February 14, 2003
 - (2) Letter from K. R. Jury (AmerGen Energy Company, LLC) to U.S. NRC, "Additional Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program," dated July 17, 2003

In Reference 1, AmerGen Energy Company (AmerGen), LLC submitted 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 proposed allowing 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.

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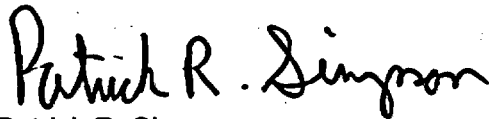
October 2, 2003
U. S. Nuclear Regulatory Commission
Page 2

Reference 2 provided requested additional information in support of the NRC review of the proposed relief request.

Subsequent to the NRC's review of References 1 and 2, the NRC has identified that additional information be provided to support justification of the proposed alternative valve testing requirements for valves 1SX012A, 1SX012B, 1SX062A, and 1SX062B. The attachment to this letter provides the NRC requested information.

Should you have any questions related to this information, please contact Mr. Timothy A. Byam at (630) 657-2804.

Sincerely,

A handwritten signature in black ink that reads "Patrick R. Simpson". The signature is written in a cursive style with a large, prominent "P" and "S".

Patrick R. Simpson
Manager – Licensing

Attachment: Supplemental Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

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

ATTACHMENT

Supplemental Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

The following details provide further justification for changing the testing frequency from the current cold shutdown to once per cycle, without restriction on plant operating mode.

Non-Refueling Outage Cold Shutdown Testing

Cold shutdowns, other than those associated with refueling outages, are infrequent and typically prompted by emergent equipment issues. Resources and scheduled activities during a cold shutdown are primarily devoted to recovery from the shutdown and expeditiously returning the unit to power. In order to stroke the Shutdown Service Water (SX) system valves 1SX012A, 1SX012B, 1SX062A, and 1SX062B, it is necessary to realign the Component Cooling Water (CC) system to the Fuel Pool Cooling and Cleanup (FC) system heat exchangers. The time required to restore the heat exchangers to a cleanliness level necessary to support this activity may delay the unit's return to power, making it impractical to perform the stroke time testing during cold shutdown. Historically, the time it takes to drain and refill the heat exchangers is approximately 16 to 24 hours. This time could be increased if additional flushing is required. Extending the unit shutdown for the purpose of stroking the valves would not have a corresponding safety benefit and would not be consistent with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," ASME /American National Standards Institute (ANSI) OMA-1988, "Operations and Maintenance of Nuclear Power Plants," Section 4.2.1.2(g), which states: "...it is not the intent of this Part to keep the plant in cold shutdown in order to complete cold shutdown testing."

It should be noted that over the past two operating cycles (i.e., since restart from the seventh refueling outage), Clinton Power Station (CPS) has not experienced any entries into Mode 4, "Cold Shutdown," except as part of a refueling outage sequence.

Refueling Outage Testing

During Mode 4 and Mode 5, "Refueling," the amount of time and resources necessary to stroke the valves and restore the heat exchangers to acceptable cleanliness levels would detract from expeditious transition into the refueling activity. Availability of the FC system is vital to maintaining acceptable fuel pool temperatures with recently discharged fuel assemblies present. Additionally, these activities may detract from efficient refueling outage execution. It is necessary to maintain the FC system in service to provide acceptable water quality to ensure water clarity in the upper containment fuel pools. Also, the FC system is used to remove radioactive contaminants from the pool water in order to minimize the radiation level in the vicinity of the pool and the release of radioisotopes from the pool water into the air. Performing the required testing after refueling activities are complete could put this testing on critical path and could delay startup. Therefore, it would be preferable to schedule this testing with other work activities that would not impact plant startup, whether it be performed during a refueling outage or during an on-line system outage.

ATTACHMENT

Supplemental Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

Component Reliability

Valves 1SX012A, 1SX012B, 1SX062A, and 1SX062B each have had a very good performance history, having never failed an Inservice Testing Program test. The valves are normally closed and seldom operated, except for the performance of surveillance testing. As stated above, the valves are stroked on a Cold Shutdown frequency, and given their on-line performance history and the fact that CPS does not routinely enter Cold Shutdown testing for an extended period (i.e., other than during refueling), the valves are, in effect, only stroked once each refueling outage to satisfy surveillance requirements. The valves are in a raw water system that is susceptible to silting. Due to the concerns associated with untreated lake water, the piping in which the valves are located is included in the CPS Generic Letter 89-13 program. These valves are located at the interface of raw lake water and clean demineralized water. Currently, the lines are scheduled for non-destructive examination (i.e., radiography) on a 10-year frequency.

The valves are maintained in a standby condition during unit operation. The only routine operational evolution performed that requires these valves to be exercised is the flow balance testing performed every 4 years. Following approval of the proposed relief request, the flow balance testing will be scheduled in conjunction with the subject code required valve stroking. There are no other SX system surveillances that require cycling of the subject valves. As discussed in ASME Code Case OMN-1, "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants," motor-operated valves shall be exercised on an interval not to exceed once per refueling cycle. This request does not seek additional relaxation beyond this requirement.

Motor Operated Valve (MOV) Testing Program

The 1SX012A/B and 1SX062A/B valves have an inherently robust design. They are standard design code valves utilizing Limitorque SMB-000 type motor operators. Operating experience with these MOV's has been exceptionally good, with the likelihood of valve failure being statistically extremely low. The actuators have approximately a 30% margin per Generic Letter 89-10 program calculations.

The valves are identified as low risk components in the CPS MOV testing program. The valves are well maintained through periodic inspection, lubrication and Valve Operator Testing Evaluation System (VOTES) testing. The VOTES testing provides an excellent analytical tool for monitoring valve degradation. These MOV's are currently on a 3-year clean and inspect periodicity and a 5-year thrust verification testing periodicity.

Conclusion

The above discussion identifies why it is an acceptable alternative to allow testing of the subject SX valves as proposed and why it is undesirable to restrict stroking the

ATTACHMENT

Supplemental Information Supporting the Proposed Alternative Testing Requirements for Shutdown Service Water System Valves for the Second 10-Year Inservice Testing Program

1SX012A, 1SX012B, 1SX062A, and 1SX062B valves solely during a cold shutdown or refueling outage due to conflicting work activities and schedule constraints. However, there may be instances when stroking the valves may be feasible during a cold shutdown or refueling outage based on the scheduled work scope. Therefore, as requested in the referenced letter, CPS proposes to allow testing of the 1SX012A, 1SX012B, 1SX062A, 1SX062B valves, without restriction on plant operating mode, while maintaining a once per refueling cycle testing frequency.