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

Reference: 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

In the above reference, 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 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.

Subsequent to the NRC's initial review of the subject relief request, the NRC has requested that we provide additional information to support justification of the proposed alternative valve testing requirements. The attachment to this letter provides the NRC requested information.

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

Sincerely,

Keith R. Jury

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

Attachment: Additional 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

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

Question 1

Please provide a risk-informed justification, either quantitative or qualitative, for why testing on-line is justifiable as compared to testing during the refueling outage. In addition, please identify any compensatory measures to be established as a risk management action to reduce the risk impact of testing with the unit at power.

Response 1

The subject valve testing does not impact Shutdown Service Water (SX) system availability or operability. However, the valve testing does impact the supplied components, such as the Main Control Room ventilation (VC) or Standby Gas Treatment (VG) systems. The proposed alternative testing would allow the option to exercise and stroke time test the affected SX valves once per fuel cycle regardless of plant mode. AmerGen intends to perform the full-stroke tests of these valves during the existing system work windows. The proposed additional valve stroke time testing will be bundled within the system work windows such that the overall system outage duration is not increased. The systems impacted by the stroke time testing are removed from service during the work window and tested in accordance with procedural guidelines. Work on these systems is completed within the Technical Specification Limiting Condition for Operation (LCO) Action Time requirements. AmerGen does not anticipate that this testing will result in an increase in the system outage duration for any of the affected systems. Therefore, addition of the SX valve stroke time testing to the on-line work windows will not increase overall plant risk. By removing the subject testing from the refueling outage, outage risk is reduced, resulting in an overall decrease in aggregate plant risk. AmerGen manages on-line risk during the work window by utilizing the guidance provided in the work control procedure WC-AA-101, "On-Line Work Control Process." In accordance with this procedure, a configuration risk assessment of the planned maintenance activities is conducted prior to initiating any maintenance activity. If emergent conditions result in an orange or red risk color then compensatory measures must be enacted to mitigate the risk until such time as risk is reduced to an acceptable level. These compensatory measures include protecting redundant and diverse structures, systems, and components (SSCs), briefing operations crews on the risk configuration, and making efforts to limit the duration of the risk sensitive activities. No additional specific compensatory measures are required for performance of the valve stroke time testing on-line.

Question 2

Please provide information on scheduled work windows for the associated systems during refueling outages and at power. Please provide information on the time frame of the work windows and the time required to perform the valve testing.

Response 2

If the subject valves are tested during a refueling outage, the currently scheduled duration for testing is 19 hours. This valve testing is typically a driver for taking the affected systems out of service during the refueling outage. However, the systems may also be removed from service for bus outages or motor operated valve work. In the case of VC and VG, the systems are not credited when the corresponding division of SX is out

of service. The valve stroke time testing is coordinated such that it is performed during a divisional SX outage when possible. Typically, CPS will have one divisional SX outage each refueling outage. The other train of VC or VG is typically tested at a time when the train is not being credited for operation.

If the valves are tested on-line during a planned system work window, the valve stroke testing will be bundled within the system work window such that the testing is performed in parallel with other work and will not lengthen the work window or the system outage duration. Typically, each of the affected systems has a divisional outage each quarter in which the bulk of the system maintenance is performed. Such tasks include preventive maintenance on motor operated valves and breakers, instrument calibrations, chiller preventive maintenance activities, VC and VG filter testing, and preventive maintenance on damper actuators. As noted above, work on these systems is completed within the Technical Specification LCO Action Time requirements.

Question 3

Valves 1SX012A, 1SX012B, 1SX062A and 1SX062B are currently tested at a cold shutdown frequency. The relief request is for valves that are tested on a refueling outage frequency. These valves do not appear to meet the requirements for the requested relief. Please provide clarification.

Response 3

AmerGen had included the 1SX012A, 1SX012B, 1SX062A, and 1SX062B valves in this relief request with the understanding that these valves, unlike the other valves in the relief request, are on a cold shutdown frequency in accordance with ASME/ANSI OMa-1988, Part 10, Sections 4.2.1.2(c) and 4.2.1.2(g). Therefore, it was an oversight that Section 5, "Proposed Alternative and Basis for Use," of the Attachment to Reference 1 states, "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)."

This sentence should be revised to read as follows:

"These valves are currently exercised and stroke time tested during cold shutdown and/or refueling outages in accordance with ASME/ANSI OMa-1988, Part 10, Sections 4.2.1.2(c), 4.2.1.2(g), and/or 4.2.1.2(e)."

Question 4

The submittal implies that the FC heat exchangers are in service during valve testing and are then removed from service. Please describe the evolutions involved in testing valves 1SX012A,B and 1SX062A,B. Discuss the condition of the CC and SX systems during the evolution. Describe the controls in place that prevent a loss of the CC system during the activity.

Response 4

While Section 4, "Reason for Request," of the Attachment to Reference 1 states that "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," it was not AmerGen's intent to imply that the Fuel Pool Cooling and Cleanup

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(FC) System heat exchanger is in service for valve stroking. In fact, the associated heat exchanger is removed from service prior to beginning the valve testing. In accordance with CPS procedure 9061.06, "Containment/Drywell Isolation Valve Cold Shutdown 18 Month Operability," the actual sequence of testing is as follows.

- The corresponding FC pump and heat exchanger (A or B) are verified as removed from service. The Component Cooling Water (CCW or CC) System is not aligned to the heat exchanger.
- The corresponding division of CC isolation valve "In Test" switch is placed in the "TEST" position.
- The appropriate division of CC "NOT AVAILABLE CCW SYSTEMS" alarm comes in, and the "MOV's in Test," status light is energized.
- The CC to FC heat exchanger isolation valves, 1CC075A (or B) and 1CC076A (or B), are then closed and verified.
- The CC isolation valve "In Test" switch is placed in the "NORMAL" position.
- The appropriate division of CC, "NOT AVAILABLE CCW SYSTEMS," alarm clears and the "MOV's in Test," status light is de-energized.
- The corresponding division of the Shutdown Service Water (SSW or SX) System isolation valve "In Test" switch is placed in the "TEST" position.
- The appropriate division of SX "NOT AVAILABLE SSW SYSTEMS" alarm comes in, and the SX "MOV's in Test," status light is energized.
- The SX to FC isolation valves, 1SX012A/B and 1SX062A/B, are stroked full open then full shut while being timed. The valves are cycled one at a time by de-energizing the companion valve breaker. This practice minimizes raw water introduction into the heat exchanger.
- The SX isolation valve "In Test" switch is placed in the "NORMAL" position.
- The appropriate division of SX, "NOT AVAILABLE SSW SYSTEMS", alarm clears and the "MOV's in Test," status light is de-energized.
- The FC heat exchanger is flushed prior to aligning CC. The heat exchanger is drained, refilled, and chemistry samples are taken for chloride, pH, and conductivity.
- Following satisfactory chemistry sampling, CC flow is established through the FC heat exchanger in accordance with the CC operating procedure.

During the sequence of valve stroking described above, the SX system is normally in standby, and the system piping is pressurized by the Plant Service Water System. The CC system remains in service supplying remaining loads, such as reactor recirculation pump seals, service air compressors, and penetration seal coolers.

During performance of the stroking activity, the CC isolation valves are procedurally controlled to ensure the valves are isolated in the TEST mode. Further, the surveillance procedure ensures that the CC isolation valves demonstrate full closure prior to opening the SX valves, thus preventing the CC pump from reaching run-out conditions.

System restoration following valve stroking is procedurally controlled by the CC system operating procedure, which includes monitoring of all CC parameters.

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