

March 28, 2002

Mr. Oliver D. Kingsley, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, Illinois 60555

SUBJECT: CLINTON POWER STATION, UNIT 1 - RELIEF REQUEST 2204
(TAC NO. MB2548)

Dear Mr. Kingsley:

By letter dated June 21, 2001, supplemented by letter dated January 18, 2002, AmerGen Energy Company (AmerGen), LLC, submitted a request for relief from the American Society of Mechanical Engineers/American National Standards Institute, Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1, requirements for the Clinton Power Station, Unit 1. The Relief Request 2204 proposed changes to Section 3.4.1.1(d) related to the remote actuation of main steam pressure relief valves with auxiliary actuating devices.

The U.S. Nuclear Regulatory Commission staff has evaluated Relief Request 2204, and finds that the proposed alternative may be authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety for the Clinton Power Station, Unit 1. The proposed alternative is only being authorized for the remainder of the second 10-year inservice testing (IST) interval expected to end December 31, 2009. A relief request for the third 10-year IST interval, if necessary, should be submitted at a later date. Our safety evaluation is enclosed.

Sincerely,

/RA/

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosures: Safety Evaluation

cc w/encls: See next page

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Docket No. 50-461

Enclosures: As stated

cc w/encls: See next page

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Clinton Power Station, Unit 1

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Clinton Power Station, Unit 1

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE TESTING REQUIREMENTS

RELIEF REQUEST 2204

CLINTON POWER STATION, UNIT 1

AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-461

1.0 INTRODUCTION

The *Code of Federal Regulations*, 10 CFR 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers (ASME) Code Class 1, 2 and 3 pumps and valves be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a (a)(3)(i), (a)(3)(ii) or (f)(6)(i). In proposing alternatives or requesting relief, the applicant must demonstrate that: (1) the proposed alternative provides an acceptable level of quality and safety; (2) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety or (3) conformance is impractical for its facility.

2.0 BACKGROUND

By letter dated June 21, 2001, AmerGen Energy Company (AmerGen), LLC, the licensee for Clinton Power Station (Clinton), Unit 1, submitted a request for relief from certain ASME Code IST requirements pertaining to testing of the main steam line safety/relief valves (S/RVs). The Clinton IST program requires that the testing meet the requirements of the ASME/American National Standards Institute, Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1 standard (OM-1). Specifically, the licensee's Relief Request 2204, seeks relief from performing stroke testing to verify open and close capability after the valves are maintained or refurbished in place, removed for maintenance and testing, or both. The Clinton S/RVs are identified below:

S/RVs with Automatic Depressurization System (ADS) function:

1B21-F041B, C, D, and F; 1B21-F047A, and C; 1B21-F051G

S/RVs with Low-Low Set (LLS) function:

1B21-F047F; 1B21-051B, C, D, and G

S/RVs without ADS and LLS function:

1B21-F041A, G, and L; 1B21-F047B, and D

These valves have both a safety mode and a relief mode of operation. The safety mode is the self-actuating function which is necessary to relieve system overpressure. The relief mode is accomplished by an automatic or manual control circuit which applies electric power to solenoids which provide control air to the pneumatic actuator piston.

3.0 CODE REQUIREMENTS

OM-1, Section 3.4.1.1(d) requires that each valve that has been maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled shall be remotely actuated at reduced system pressure to verify open and close capability of the valve prior to resumption of electric power generation for main steam pressure relief valves with auxiliary actuating devices.

The licensee seeks relief from the OM-1, Section 3.4.1.1(d) requirement, and has requested that the relief be applicable for the remainder of the second 10-year IST interval which began on January 1, 2000, and is expected to end on December 31, 2009.

4.0 LICENSEE'S BASIS FOR RELIEF

The licensee states that a minimum 25 percent of the S/RVs are removed from the plant and setpoint tested in accordance with IST program and technical specification surveillance requirement 3.4.4.1. The setpoint testing program includes the manual actuation of the S/RVs by the bench-test valve control system. After installation in the plant, the valves are actuated a second time by the plant-installed manual actuation equipment.

The licensee states that experience at Clinton has indicated that repeated manual actuation of the main steamline S/RVs, which includes ADS and LLS valves, can lead to valve through-seat leakage during plant operation.

5.0 PROPOSED ALTERNATIVE TESTING

The licensee states that the proposed alternative will allow the testing of the S/RVs to be performed in two separate steps. The manual actuation of the valves by the bench-test valve control system of the setpoint testing program, will verify the opening and closing of the valve with the actuator coupled to the valve stem. The plant-installed manual actuation equipment will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator. This will allow the testing of the plant-installed manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the valve to open. Therefore, all the components of the S/RV and ADS will continue to be tested. This uncoupled actuator test will also be performed following any maintenance activity that could affect the relief mode of operation for the associated S/RV.

The remote actuation of the S/RVs shall be performed in two separate steps. The manual actuation of the S/RVs by the bench-test valve control system of the setpoint testing program,

will verify the opening and closing of the valve with the actuator coupled to the valve stem. The pneumatic valve actuator will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator. The licensee has proposed that the requested relief from OM-1 testing be authorized for the remainder of the second 10-year IST interval, which began January 1, 2000, and is expected to end December 31, 2009.

6.0 EVALUATION

OM-1, Section 3.4.1.1(d), requires that each valve with auxiliary actuating devices (that has been maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled) be remotely actuated at reduced system pressure to verify open and close capability of the valve prior to resumption of power. In lieu of the Code-required testing, the licensee proposes to perform the testing in two steps. First, after performing the Code required setpoint testing, stroke testing of the S/RV will be performed by the bench-test valve control system of the setpoint testing program. This test will verify the opening and closing of the valve with the actuator coupled to the valve stem. Second, the plant-installed manual actuation equipment will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator. This test will verify the operability of the plant-installed manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the valve to open.

The staff finds that this is an acceptable alternative testing method, because it provides for stroke testing of the S/RVs at the same frequency as required by OM-1 and provides for stroke testing of the S/RV actuators in the installed position. The staff also finds that the current testing requirements during power operation can result in additional valve through-seat leakage of the S/RVs during plant operation. Such leakage would be directed to the primary containment suppression chamber causing either a need to increase cooling to the suppression pool water or a possible plant shutdown to fix the leaking valve. Therefore, the staff finds that the licensee's proposed alternative testing to be acceptable.

The licensee's proposed alternative is consistent with the 1995 Edition and 1996 Addenda of the ASME Code requirements which are currently incorporated by reference in 10 CFR 50.55a. This would result in the requested relief becoming unnecessary for the third 10-year IST interval when that Code Edition and Addenda (or later) are required to be used.

7.0 CONCLUSION

Based on the above evaluation, the staff has determined that, pursuant to 10 CFR 50.55a (a)(3)(i), the proposed alternative may be authorized for Clinton for the remainder of the second 10-year IST interval expected to end December 31, 2009, on the basis that the alternative testing provides an acceptable level of quality and safety. A relief request for the third interval, if necessary, should be submitted at a later date.

Principal Contributor: Y.S. Huang

Date: March 28, 2002