

September 21, 2001

Mr. Oliver D. Kingsley, President  
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1400 Opus Place, Suite 500  
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SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - RELIEF REQUEST FOR  
CONTAINMENT RELIEF VALVES INSERVICE TESTING (TAC NOS. MB1782  
AND MB1783)

Dear Mr. Kingsley:

By letter dated April 20, 2001, you submitted a request for relief from the American Society of Mechanical Engineers (ASME) Code inservice testing (IST) requirements for the LaSalle County Station, Units 1 and 2, containment relief valves. The relief request, RV-05, proposes to change the containment relief valve setpoint test frequency to 24-months to be consistent with that specified in LaSalle County Station, Units 1 and 2, Technical Specifications (TS) Surveillance Requirement (SR) 3.6.1.6.3.

The U.S. Nuclear Regulatory Commission (NRC) staff has evaluated RV-05, 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 LaSalle County Station, Units 1 and 2 IST program. The proposed alternative is only being authorized for the remainder of the second 10-year IST interval for LaSalle County Station, Units 1 and 2. A relief request for the third 10-year IST interval, if necessary, will be considered at a later date. Our safety evaluation is enclosed.

Sincerely,

***/Claudia Craig for/***

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

Docket Nos. 50-373 and 50-374

Enclosure: As stated

cc w/encl: See next page

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Units 1 and 2

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Units 1 and 2

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The U.S. Nuclear Regulatory Commission (NRC) staff has evaluated RV-05, 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 LaSalle County Station, Units 1 and 2 IST program. The proposed alternative is only being authorized for the remainder of the second 10-year IST interval for LaSalle County Station, Units 1 and 2. A relief request for the third 10-year IST interval, if necessary, will be considered 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 Nos. 50-373 and 50-374  
 Enclosure: As stated  
 cc w/encl: See next page  
 Docket Nos. 50-373 and 50-374

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DATE	9/21/01	9/20/01	9/17/01	9/21/01

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THE INSERVICE TESTING OF CONTAINMENT RELIEF VALVES

RELIEF REQUEST RV-05

LASALLE COUNTY STATION, UNITS 1 AND 2

EXELON GENERATION COMPANY, LLC

DOCKET NOS. 50-373 AND 50-374

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 (f)(6)(i), (a)(3)(i), or (a)(3)(ii). In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) conformance is impractical for its facility; (2) the proposed alternative provides an acceptable level of quality and safety; or (3) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.0 BACKGROUND

By letter dated April 20, 2001, Exelon Generation Company, LLC (the licensee), submitted a request for relief from certain ASME Code IST requirements pertaining to tests of the LaSalle Units 1 and 2 containment relief valves, known as the suppression chamber-drywell vacuum breakers. The plants IST programs require that the testing meet the requirements of ASME Code OM-1987, Part 1 (herein referred to as OM-1). Specifically, this request seeks relief from performing as-found set pressure tests on all vacuum breakers every 6 months. The licensee stated that the purpose of the relief request is to set the frequency requirement of the valve setpoint tests to that specified in the LaSalle County Station, Units 1 and 2, Technical Specifications (TS). There are four vacuum breakers installed on each of the Units 1 and 2 containments and are identified as valves 1PC001A, B, C, and D on Unit 1 and 2PC001A, B, C, and D on Unit 2. For these eight valves, the licensee is requesting relief from the following testing requirement:

OM-1987, Part 1, paragraph 1.3.4.3(a), "Test Requirement (Containment Relief Valves)," requires that within every six-month period, operability tests including valve setpoint tests, shall be performed unless historical data indicates the need for more frequent testing.

Enclosure

The licensee requested that the relief be granted for the remaining duration of the second 10-year IST interval and for the third 10-year interval for LaSalle, Units 1 and 2. The second IST interval for Unit 1 ends on November 23, 2004, and the second IST interval for Unit 2 ends on October 17, 2004.

### 3.0 LICENSEE'S BASIS FOR RELIEF

The licensee provided the following basis for the relief request:

“The primary containment ensures that the release of radioactive materials will be restricted to those paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage limitation, will limit the site boundary radiation dose to a small fraction of the limits of 10 CFR Part 100, ‘Reactor Site Criteria,’ during accident conditions. The primary containment walls have a steel liner, which acts as a low leakage barrier.

The primary containment structure consists of a drywell and a suppression chamber. The primary function of the drywell is to contain the effects of a design-basis recirculation line break and direct the steam released from a pipe break into the water pool of the suppression chamber. The drywell contains a floor that serves as a pressure barrier between the drywell and suppression chamber, and as a support structure for the reactor pedestal. The primary function of the suppression chamber is to provide a reservoir of water capable of condensing the steam flow from the drywell and collecting the non-condensable gases in the suppression chamber air space.

Vacuum relief valves are provided between the drywell and suppression chamber to prevent exceeding the drywell floor negative design pressure and backflooding of the suppression chamber pool water into the drywell. The vacuum relief valves are designed to equalize the pressure between the drywell and suppression chamber air space so that the reverse pressure differential across the drywell floor will not exceed the design value of five pounds per square inch. This is needed to maintain the structural integrity of the primary containment under conditions of large differential pressures. Therefore, the subject relief valves are considered containment relief valves and are subject to the testing requirements outlined in OM-1, Section 1.3.4.3(a), for Class 2 and 3 containment vacuum relief valves.

The vacuum relief valves (four assemblies) are outside the primary containment and form an extension of the primary containment boundary. The vacuum relief valves are mounted in special piping which connects the drywell and suppression chamber. In each vacuum breaker assembly, there are two manually-operated butterfly valves, one on each side of the vacuum breaker, which are provided as system isolation valves should failure of the vacuum breaker occur and as isolation valves for testing. The vacuum relief valves are instrumented with redundant position indication in the main control room. The valves are provided with the capability for local manual testing.

In accordance with the requirements of LaSalle County Station, Unit 1 and Unit 2, Technical Specifications (TS) Surveillance Requirement (SR) 3.6.1.6.1 and SR 3.6.1.6.2, each vacuum breaker is verified to be closed at least once per 14 days, and full-stroke exercised at least once per 92 days and within 12 hours after discharge of steam to the suppression chamber

from the safety-relief valves. Additionally, LaSalle County Station Technical Requirements Manual (TRM), Section 3.6.b.1 requires both of the position indicators for each valve to be verified operable at least once per 92 days. In addition to the above, TS SR 3.6.1.6.3 requires measurement of the force to open each vacuum breaker from the closed position. Technical Specification SR 3.6.1.1.3 also measures vacuum breaker bypass leakage at least once per 24-months.

The 6-month operability tests identified in OM-1, Section 1.3.4.3(a), refer to the open and close capability (i.e., exercise) tests, and valve setpoint tests. A comparison of the LaSalle County Station TS SRs and OM-1 test requirements for the subject valves indicates that the testing frequencies identified in the TS SRs are more limiting except for the performance of the valve setpoint tests.

There are two primary methods to conduct a valve setpoint test for this type of vacuum breaker—manually exercising while measuring breakaway torque and valve setpoint testing using pressurized air. As stated above, the subject valves are provided with the capability for local manual testing. However, this manual testing method was determined to be unreliable because of the inconsistencies in the test data identified during preoperational testing. The NRC identified this test method as an open item (373/81-28-07). Resolution of this issue included a commitment to perform this testing using pressurized air.

Previously, LaSalle County Station obtained relief to perform the testing every 18 months as prescribed by TS (Relief RV-05, Revision 1, dated July 1998). The bases for the previous relief was the determination that it was impractical to verify vacuum breaker valve setpoint using pressurized air every 6 months during plant operation. Verifying vacuum breaker setpoints requires the closure of the two manually operated butterfly valves upstream and downstream of the subject valves, the hook up of air supply hoses, pressurization of a large volume of piping, and blowdown of air inventory into the nitrogen inerted drywell. Since the two manually operated butterfly valves must be closed to perform this test, a TS Action Statement must be entered for the sole purpose of performing this test.

A review of the maintenance history of the subject valves tested at the previous 18-month TS frequency indicates that 29 tests were conducted with only one failure. The failure was related to the valve position indicator and did not prevent the valve from performing its safety function. Additionally, the current 24-month Technical Specification setpoint test frequency is consistent with the 2-year test frequency outlined in Section I 1.3.7 of mandatory Appendix I of the 1995 Edition of the ASME OM Code.”

#### 4.0 PROPOSED ALTERNATE TESTING

The licensee proposes that the subject containment relief valves be allowed to be tested at a 24-month frequency in accordance with the 24-month setpoint test frequency identified in TS SR 3.6.1.6.3.

## 5.0 EVALUATION

The LaSalle County Station, Units 1 and 2, TS provide for full-stroke exercise testing every 92 days and closure verification every 14 days, which is significantly more frequent than the OM-1 required exercise testing every 6 months. While the 24-month TS required setpoint tests are significantly less frequent than the OM-1 required 6-month test frequency, it is expected that the 92-day TS required full-stroke testing will limit the amount of degradation (i.e, sticking of the valve disk to its seat by corrosion or debris buildup) which could cause the setpoints of these valves to increase over time. The 92-day TS required full-stroke testing provides assurance that the valve setpoints will not further degrade when the setpoint testing is performed at a 24-month frequency. Further, the licensee's maintenance history for these valves indicates that setpoint tests performed at a 18-month frequency have had no failures. The staff also recognizes the hardship involved in performing the tests at the OM-1 required 6-month frequency, which was a part of the basis for the previously granted relief to perform the setpoint testing at a 18-month frequency. Therefore, the staff finds the licensee's proposal to setpoint test the subject containment relief valves at a 24-month cycle, consistent with the 24-month TS required testing, to be acceptable. This finding is made, in part, with consideration that the provisions of 10 CFR 50.65 (Maintenance Rule) require that licensees monitor the performance or condition of components, such as containment relief valves, against licensee established goals commensurate with safety, taking into account industry-wide operating experience. When these goals are not met, appropriate corrective actions are required to be taken.

The licensee has proposed that the requested relief be granted for the remainder of the second IST interval, which ends November 23, 2004, for Unit 1 and October 17, 2004, for Unit 2, and for the following third 10-year IST interval. The licensee's requested relief is consistent with the 1995 Edition and 1996 Addenda of the ASME OM 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 interval when that Code Edition and Addenda (or later) are required to be used. Therefore, it is premature to request relief now for the third 10-year IST interval. The proposed alternative is only being authorized for the remainder of the second 10-year IST interval for Units 1 and 2.

## 6.0 CONCLUSION

Based on the above evaluation, the staff has determined that, pursuant to 10 CFR 50.55a (a)(3)(i), the proposed alternative is authorized for the remainder of the second 10-year IST interval for LaSalle, Units 1 and 2, on the basis that the alternative testing provides an acceptable level of quality and safety.

Principal Contributor: G. Hammer

Date: September 21, 2001