January 30, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer
and Senior Vice President
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN REQUEST FOR RELIEF NOS. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 FOR (TAC NOS. MD5459, MD5460, MD5390, MD5463, MD5464, MD5465, MD5466, MD5467, AND MD5468)

Dear Mr. Pardee:

By letter dated April 30, 2007, Exelon Generating Company, LLC (EGC, the licensee) proposed its Third 10-Year Interval Inservice Inspection Program Plan Request for Relief (RR) Nos. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 for LaSalle County Station, Units 1 and 2 (Agencywide Documents Access and Management System Accession No. ML071280395). The relief request proposed an alternative to the requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Section 55a (10 CFR 50.55a) (a)(3), which states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that, (i) the proposed alternatives would provide an acceptable level of quality and safety or, (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff, with the assistance of Pacific Northwest National Laboratory, has reviewed and evaluated the information provided by the licensee. The NRC staff found RRs Nos. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 acceptable. The NRC staff's review of EGC's analysis in support of its requests for relief is documented in the enclosed safety evaluation.

Sincerely,

/RA/

Russell Gibbs, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure: Safety Evaluation

cc w/encl: See next page

Mr. Charles G. Pardee
Chief Nuclear Officer
and Senior Vice President
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

January 30, 2008

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN REQUEST FOR RELIEF NOS. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 FOR (TAC NOS. MD5459, MD5460, MD5390, MD5463, MD5464, MD5465, MD5466, MD5467, AND MD5468)

Dear Mr. Pardee:

By letter dated April 30, 2007, Exelon Generating Company, LLC (EGC, the licensee) proposed its Third 10-Year Interval Inservice Inspection Program Plan Request for Relief (RR) Nos. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 for LaSalle County Station, Units 1 and 2 (Agencywide Documents Access and Management System Accession No. ML071280395). The relief request proposed an alternative to the requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Section 55a (10 CFR 50.55a) (a)(3), which states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that, (i) the proposed alternatives would provide an acceptable level of quality and safety or, (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff, with the assistance of Pacific Northwest National Laboratory, has reviewed and evaluated the information provided by the licensee. The NRC staff found RRs Nos. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 acceptable. The NRC staff's review of EGC's analysis in support of its requests for relief is documented in the enclosed safety evaluation.

Sincerely,
/RA/

Russell Gibbs, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374
Enclosure: Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	LPL3-2 R/F	RidsNrrDorlLpl3-2	RidsNrrPMSSands	RidsNrrDciCvib
RidsNrrDirsItsb	RidsNrrLAEWhitt	RidsNrrDorlDpr	RidsAcrsAcnwMailCenter	RidsRgn3MailCenter
RidsOgcRp	RBywater, EDO R3		TMcLellan, NRR	

ADAMS ACCESSION NO.: ML073610587 NRR-028 *no changes to SE input

OFFICE	LPL3-2/PM	LPL3-2/LA	DCI/CVIB/BC	OGC * NLO w/ comments	LPL3-2/BC
NAME	SSands:sp	EWhitt	MMitchell	M Loftus	RGibbs
DATE	01/29/08	01/29/08	09 / 12 / 07 *	01/ 16 /08	01/ 30/08

OFFICIAL RECORD COPY

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

THIRD 10-YEAR INTERVAL INSERVICE INSPECTION

REQUEST FOR RELIEF NOS. I3R-03, I3R-04, I3R-08, I3R-09 AND I3R-10

LASALLE COUNTY STATION, UNITS 1 AND 2

EXELON GENERATING COMPANY, LLC.

DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) staff with the assistance of Pacific Northwest National Laboratory (PNNL), has reviewed and evaluated the information provided by Exelon Generating Company, LLC (the licensee) in its letter dated April 30, 2007, in support of its Third 10-Year Interval Inservice Inspection (ISI) Program Plan Request for Relief (RR) Nos. I3R-03, I3R-04, I3R-08, I3R-09 and I3R-10 for LaSalle County Station (LSCS,) Units 1 and 2 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071280395). The NRC staff adopts the evaluations and recommendations for granting or denying relief contained in PNNL's Technical Letter Report which has been incorporated into this safety evaluation (SE) and can be found in ADAMS under Accession No. ML072490450. The SE lists each RR and the status of approval.

2.0 REGULATORY REQUIREMENTS

Inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* (B&PV Code), and applicable addenda, as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g), except where specific relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The regulation at 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the licensee demonstrates that, (i) the proposed alternatives would provide an acceptable level of quality and safety or, (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports), shall meet the requirements except the design and access provisions, and the preservice examination requirements, set forth in the ASME Code, Section XI, to the extent practical within the limitations of design, geometry, and materials of construction of the

components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code, which was incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The ASME Code of record for LSCS, Units 1 and 2 third 10-year interval ISI programs, which will begin on October 1, 2007, is the 2001 Edition, through the 2003 Addenda, of Section XI of the ASME B&PV Code.

Section 50.55a(g)(5)(i) of 10 CFR requires that inservice inspection programs for boiling or pressurized water-cooled nuclear power facilities be revised to meet the requirements of paragraph 10 CFR 50.55a(g)(4). Thereafter, 10 CFR 50.55a(g)(5)(iii) and (iv) allow a licensee, who has determined it to be impractical for its facility to meet certain code requirements, to provide its determination to the NRC. Additionally, 10 CFR 50.55a(g)(6)(i) states that the NRC will evaluate determinations, along with requests for relief, provided pursuant to 10 CFR 50.55a(g)(5). The NRC will grant such requests if it is authorized by law, will not endanger life or property, or the common defense and security, and is otherwise in the public interest.

3.0 STAFF EVALUATION

The information provided by the licensee in support of the requests for relief from ASME Code requirements has been evaluated and the bases for disposition are documented below.

3.1 RR I3R-03, (LSCS, Units 1 and 2), Examination Category C-G, Item C6.10, Pressure Retaining Welds in Pumps and Valves

3.1.1 ASME Code Requirement:

ASME Code, Section XI, Examination Category C-G, Item C6.10, requires 100 percent surface examination, as defined by Figure IWC-2500-8, of all pump casing welds. Where multiple pumps of similar design, size, function, and service exist in each piping run, only one of the multiple pumps is required to be examined. The examination may be performed from the inside or outside surface of the pump.

3.1.2 Licensee ASME Code Relief Request:

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code-required surface examination of casing welds on the ASME Code, Class 2 pumps listed below.

1A, 1B & 1C Residual Heat Removal (RHR) Pumps
2A, 2B & 2C RHR Pumps
1 & 2 High Pressure Core Spray Pumps
1 & 2 Low Pressure Core Spray Pumps

3.1.3 Licensee Basis for Relief Request (as stated):

LSCS, RHR pumps, high pressure core spray pumps, and low pressure core spray pumps were originally designed where the pump casing welds were encased in concrete, thus making the welds inaccessible for inservice inspection. Therefore, it is impractical for LSCS, to perform the surface examination of these welds without destruction of the concrete resulting in unnecessary engineering and installation costs and radiation exposure without a compensating increase in safety. Additionally, due to the design of the subject pumps, access to the affected welds can only be achieved through disassembly of the pump, removal of the pump internals, and the required surface examinations performed from the inside surface of the welds. This effort, in the absence of any other necessary pump maintenance, represents a significant expenditure of man hours and radiation exposure to plant personnel, without a compensating increase in plant safety.

3.1.4 Licensee Proposed Alternative Examination (as stated):

In the event the subject welds become accessible upon disassembly of any one of the pumps, the welds will be surface examined from the inside surface, or a VT-1 visual examination will be performed for that particular pump group to the maximum extent practicable based on the obstructions and geometric constraints detailed in this relief request. The examination method will be determined by LSCS based on radiation environment data at the time access is enabled. Additionally, a VT-2 visual examination during system pressure testing per [ASME Code, Section XI,] Examination Category C-H will be performed once each period by examining the surrounding area (exposed areas around these components where the pump casing join/merge with the concrete) for evidence of leakage in accordance with ASME Code, Section XI, IWA-5241(b).

3.1.5 Staff Evaluation:

The ASME Code requires surface examination of all casing welds in the subject ASME Code, Section XI, Class 2 pumps. However, the subject pumps are encased in concrete which makes the pressure retaining welds inaccessible from the outside surface. The inside surface of these welds may be partially accessible during disassembly, however, the pumps are not regularly disassembled for maintenance. To gain access for outside surface examination, it would be necessary to destroy the concrete encasing the pumps. Alternatively, the pumps would require disassembly solely for the purpose of examining the inside surface of the casing welds. Either of these options would create a significant burden on the licensee, therefore making the ASME Code-required surface examinations impractical to perform at LSCS, Units 1 and 2.

The licensee has proposed to perform the ASME Code-required surface examinations, or VT-1 visual examinations, from the inside of the pumps, if any of the subject pumps are disassembled during routine maintenance activities. Additionally, the accessible areas of these pumps (where the pump body merges with the surrounding concrete) are subject to a VT-2 visual examination during system leakage tests. The VT-2 visual examinations should provide an indication if significant leakage due to degradation of the pump body is experienced.

The licensee has shown that it is impractical to meet the ASME Code-required 100 percent surface examination coverage for the subject pump casing welds due to the encasement of these components in concrete. Based on the licensee's proposed alternative to examine the

welds from the inside surface, if disassembled during maintenance activities, along with the VT-2 visual examinations performed during ASME Code-required pressure testing, it is concluded that if significant service-induced degradation occurs in the subject welds, there is reasonable assurance that evidence of it will be detected.

3.2 RR I3R-04 (LSCS, Units 1 and 2), Examination Category B-K, Item B10.10, Welded Attachments for Vessels, Piping, Pumps, and Valves

3.2.1 ASME Code Requirement:

ASME Code, Section XI, Examination Category B-K, Item B10.10, requires essentially 100 percent examination, as defined by ASME Code, Section XI, Figures IWB-2500-13, -14, and -15, as applicable, of the length of ASME Code, Section XI, Class 1 welded attachments to the reactor pressure vessel (RPV). The required examination is a surface method, however a volumetric technique from one side may be used if the configuration of the attachment is as shown in ASME Code, Section XI, IWB-2500-14. "Essentially 100%," as clarified by ASME Code Case N-460, *Alternative Examination Coverage for Class 1 and Class 2 Welds*, is greater than 90 percent coverage of the examination volume, or surface area, as applicable. ASME Code Case N-460 has been approved for use by the NRC in Regulatory Guide 1.147, Revision 14, *Inservice Inspection Code Case Acceptability* (RG 1.147).

3.2.2 Licensee ASME Code Relief Request:

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code-required 100 percent surface examination of ASME Code, Section XI, Class 1 RPV stabilizer bracket attachment welds.

3.2.3 Licensee Basis for Relief Request (as stated):

Due to other plant structures and components, accessibility of 100 percent of the examination areas for these welds was not provided in the original plant design which occurred prior to the issuance of ASME Code, Section XI Inservice Inspection requirements. As indicated by Figure 13R-04.1[1], surface examination of the vessel stabilizer bracket weld is not possible due to the proximity of the bioshield wall, the stabilizer bar, and vessel insulation.

The stabilizer bracket lugs are approximately 14-inches long by 7-inches wide. From past examination data and configuration details, LSCS has identified that the entire lower length of the weld is inaccessible for surface or visual examination due to the biological shield wall and the stabilizer bar. The two side lengths and the entire top length are also not accessible for surface examination due to the RPV insulation; however, limited visual access can be obtained. LSCS has calculated the best effort examination coverage to be between 52 percent and 66 percent of the entire weld surface. This would account for the entire top length of the weld and essentially the full length of the side welds.

Due to the vessel insulation being panel-type linked by several small screws which are inaccessible for the subject panels due to the stabilizer bars and brackets, the ability to remove

[1] The licensee's drawing is not included in this report.

the insulation is not practical due to the tight clearances and potential to damage the fasteners and insulation joints. Also, these activities would have to take place in elevated dose rates and would not be consistent with as low as reasonably achievable (ALARA) practices.

3.2.4 Licensee Proposed Alternative Examination (as stated):

As an alternate examination to the ASME Code required surface examination, LSCS will perform a VT-1 visual examination on the accessible portions of the stabilizer bracket welds (approximately 52 percent of the weld length), when one of these lugs is scheduled for examination in accordance with ASME Code, Section XI.

3.2.5 Staff Evaluation:

The ASME Code requires that surface examinations of integrally-welded attachments to the RPV be performed once during each ISI interval. The stabilizer bracket assemblies at LSCS, Units 1 and 2, provide support for the RPV and consist of structural steel assemblies integrally-welded to lugs on the vessel external surface. These attachments cannot be accessed for surface examination because of their location in the annulus region that exists between the radiological bio-shield wall and the RPV outside surface, and the existing RPV insulation. To gain access to perform surface examinations, extensive modifications to the bio-shield wall and RPV insulation would be necessary. Therefore, the ASME Code-required surface examinations are impractical at LSCS, Units 1 and 2.

The stabilizer bracket welds are located on the outside surface of the RPV. Access to perform surface examinations of these integral attachment welds is not possible due to the limited space available between the permanent RPV insulation and radiological bio-shield wall. This small annulus region does not permit removal of insulation and preparation of the RPV outside surface for the required examinations. In lieu of surface examinations on the integral attachment welds, the licensee has proposed to perform a VT-1 visual examination of accessible regions (approximately 52 percent) of these attachment welds.

The licensee has shown that it is impractical to meet the ASME Code-required 100 percent surface examination coverage for the subject welds due to their design and limited access caused by the bio-shield wall and RPV insulation. Based on the licensee's alternative to perform limited VT-1 visual examinations on the subject welds, it is concluded that if significant service-induced degradation were to occur, there is reasonable assurance that evidence of it will be detected by the examinations being proposed.

3.3 RR I3R-08 (LSCS, Units 1 and 2), Examination Category C-H, Item C7.10, All Pressure Retaining Components

3.3.1 ASME Code Requirement:

ASME Code, Section XI, Examination Category C-H, Item C7.10, requires that a VT-2 visual examination be performed during a system leakage test on all ASME Code, Class 2 pressure retaining components during each inspection period. The VT-2 visual examination is intended to detect evidence of leakage and required to be performed in accordance with ASME Code, Section XI, IWC-5220, which defines the pressure and system boundaries for the test.

3.3.2 Licensee ASME Code Relief Request:

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code-required system leakage test of the RPV head flange seal leak detection system.

3.3.3 Licensee Basis for Relief Request (as stated):

The RPV head flange leak detection line is separated from the reactor pressure boundary by one passive membrane, a silver-plated O-ring located on the vessel flange. A second O-ring is located on the opposite side of the tap in the vessel flange. This line is required during plant operation and will indicate failure of the inner flange seal O-ring. Failure of the O-ring would result in a high pressure alarm in the main control room. The configuration of this system precludes manual testing while the vessel head is removed.

The configuration of the vessel tap, combined with the small size of the tap and the high test pressure requirement (approximately 1045 psig (pounds per square inch gauge)), prevents the tap from being temporarily plugged. Also, when the RPV vessel head is installed, an adequate pressure test cannot be performed due to the fact that the inner O-ring is designed to withstand pressure in one direction only. Due to the groove that the O-ring sits in and the pin/wire clip assembly, pressurization in the opposite direction into the recessed cavity and retainer clips would likely damage the O-ring and thus result in further damage to the O-ring.

Pressure testing of this line during the ASME Code, Class 2 system leakage test is precluded because the line will only be pressurized in the event of a failure of the inner O-ring. Purposely failing the inner O-ring to perform the ASME Code required test would require purchasing a new set of O-rings, additional time and radiation exposure to de-tension the reactor vessel head, install the new O-rings, and then reset and re-tension the reactor vessel head. This is considered to impose an undue hardship and burden on LSCS.

3.3.4 Licensee Proposed Alternative Examination (as stated):

A VT-2 visual examination on the ASME Code, Class 2 portion of the RPV flange leak detection line will be performed during each refueling outage when the RPV head is off and the head cavity is flooded above the vessel flange. The static head developed with the leak detection line filled with water will allow for the detection of any gross indications in the line. This examination will be performed each refueling outage as per the frequency specified by ASME Code, Section XI, Table IWC-2500-1.

3.3.5 Staff Evaluation:

The ASME Code requires that licensees perform system leakage tests during each inspection period. These leakage tests must be conducted at a pressure equivalent to normal operating pressure of the system. The subject reactor vessel flange leak detection line is designed to only experience elevated pressure if the O-ring seal on the RPV flange fails during power operations. There is no method to pressurize these small diameter lines without removing the O-ring in the flange seal region, which would prevent the reactor coolant system from being pressurized. Therefore, leakage testing of the flange leak detection line to normal reactor coolant pressure (2235 psig) is impractical.

The purpose of the RPV flange leak detection lines at LSCS are to allow detection of RPV O-ring seal failure during normal plant operation. There is no method to pressurize the subject lines to normal reactor coolant pressure without compromising the RPV flange seal. During shutdown conditions with the RPV head (and O-ring seal) removed, these piping segments are exposed to borated water in the refueling canal and experience slightly elevated line pressure (static head of approximately 35-50 psig). The licensee has proposed to perform visual VT-2 examinations of this piping during each refueling outage when the RPV head is removed and the refueling canal is filled with water. At that time, if any through-wall leakage has occurred, evidence of this leakage should be visible on the outside surface of the piping, providing a method to ensure that any potential leakage will be detected prior to compromising the intended function of these RPV head flange leak detection lines.

The licensee has shown that it is impractical to meet the ASME Code-required system leakage tests for the RPV flange seal leak detection system due to its design. Based on the licensee's alternative to perform VT-2 visual examinations on the subject lines, it is concluded that if significant service-induced degradation were to occur, there is reasonable assurance that evidence of it will be detected by the examinations being proposed.

3.4 Request for Relief I3R-09 (LSCS, Units 1, and 2), Examination Category C-H, Item C7.10, All Pressure Retaining Components

3.4.1 ASME Code Requirement:

ASME Code, Section XI, Examination Category C-H, Item C7.10, requires that a VT-2 visual examination be performed during a system leakage test on all Class 2 pressure retaining components during each inspection period. The VT-2 visual examination is intended to detect evidence of leakage and required to be performed in accordance with ASME Code, Section XI, IWC-5220, which defines the pressure and system boundaries for the test.

3.4.2 Licensee Proposed Alternative:

In accordance with 10 CFR 50.55a(a)(3)(i), the licensee proposed to use continuous pressure decay monitoring as an alternative to the ASME Code-required system leakage test for control rod drive (CRD) system accumulators and associated piping.

3.4.3 Licensee Basis for Alternative (as stated):

As required by LSCS technical specifications (TS), the CRD system accumulator pressure must be greater than or equal to 940 psig to be considered operable. The accumulator pressure is continuously monitored by system instrumentation. Since the accumulators are isolated from the source of make up nitrogen, the continuous monitoring of the CRD accumulators functions as a pressure decay type test. Should accumulator pressure fall below 1000 psig (+/- 15 psig), an alarm is received in the control room. The pressure drop for the associated accumulator is then recorded in the control room log, and the accumulator is recharged by LSCS procedure LOP-RD-20.

If an accumulator requires charging more than twice in a 30 day period, then a leak check is performed to determine the cause of the pressure loss. When leakage is detected, corrective actions are taken to repair the leaking component as required by LOP-RD-20.

Since monitoring the nitrogen side of the accumulators is continuous, any degradation of the examination performed once per inspection period would not provide an increase in safety, system reliability, or structural integrity. In addition, performance of a VT-2 visual examination would require applying a leak detection solution to 185 accumulators per unit in an elevated dose rate area resulting in significant radiation exposure without any added benefit in safety. This inspection would thus not be consistent with ALARA practices.

As an alternate to the VT-2 visual examination requirements of ASME Code, Table IWC-2500-1, LSCS will perform continuous pressure decay monitoring in conjunction with TS, 3.1.5.1 - *Control Rod Scram Accumulators, Surveillance Requirements* for the nitrogen side of the CRD accumulators including attached piping.

3.4.4 Staff Evaluation:

The ASME Code requires that a VT-2 visual examination be performed on all Class 2 pressure retaining components once during each inspection period. The VT-2 visual examination is a check for leakage of typically water-filled systems that must be performed at normal operating system pressure. However, the CRD system accumulators and associated piping are nitrogen filled components that are maintained at a constant gas pressure in order to respond to a demand for CRD actuation. As such, a standard VT-2 visual examination would not provide an adequate means to identify potential leakage. In order to test these components for potential leakage, a soap bubble test applied to all surfaces of the subject components would be necessary. This method of examination would present a significant burden for the licensee.

As an alternative, the licensee has proposed to use existing continuous on-line pressure monitoring, as required by plant TSs, nominal pressure and an alarm is triggered in the plant control room if the pressure (1000 psig) falls below that necessary for accumulator actuation (940 psig). Plant corrective action when such an event occurs is to re-charge the specific accumulator to maintain its function. If pressure decay below 1000 psig is observed more than two times in any 30-day period, a soap bubble test is applied to the subject accumulator to assess the cause and location of leakage.

The continuous on-line monitoring of the CRD system accumulators and required corrective actions, if leakage is detected, provide reasonable assurance that adequate pressure for CRD actuation is maintained. As such, the licensee's alternative provides an acceptable level of quality and safety.

3.5 Request for Relief I3R-10 (LSCS, Units, 1 and 2), Examination Category C-H, Item C7.10, All Pressure Retaining Components

3.5.1 ASME Code Requirement:

ASME Code, Section XI, Examination Category C-H, Item C7.10, requires that a VT-2 visual examination be performed during a system leakage test on all ASME Code, Class 2 pressure retaining components during each inspection period. The VT-2 visual examination is intended to detect evidence of leakage and required to be performed in accordance with ASME Code, Section XI, IWC-5220, which defines the pressure and system boundaries for the test.

3.5.2 Licensee Proposed Alternative (as stated):

In accordance with 10 CFR 50.55a(a)(3)(i), the licensee has proposed to use TS surveillance procedures as an alternative to the ASME Code-required system leakage tests for the safety relief valve (SRV) automatic depressurization system (ADS) accumulators and associated piping and valves.

3.5.3 Licensee Basis for Alternative (as stated):

As required by LSCS TS, the SRV ADS accumulator pressures are verified to be greater than or equal to 150 psig at least once every 31 days. Two compressors supply a continuous pressurization source to each of the seven accumulators required for the ADS function. In addition, LSCS TS verify that the ADS accumulator backup compressed gas system bottle pressures are greater than or equal to 500 psig at least once every 31 days.

LSCS technical surveillances [2] LTS-500-18 for LSCS, Unit 1, and LTS-500-19 for LSCS, Unit 2, perform operability testing of the main steam safety relief valves including the seven relief valves and accumulators per unit that are required to provide automatic depressurization. One specific pressure test that these procedures perform is a pressure decay test of the accumulators and associated piping and valves.

> The maximum pressure drop allowed for this test is 5 psig/2 hours. If this criteria is exceeded, appropriate troubleshooting is performed including soap-bubble application to locate leakage.
>
> Since the accumulator pressures are verified once every 31 days and a pressure decay test is performed every 18 months, any degradation of the accumulator would be detected by normal TS surveillance requirements. A separate VT-2 visual examination performed once per inspection period would not provide an increase in safety, system reliability, or structural integrity. In addition, performance of a VT-2 visual examination would require applying a leak detection solution to seven accumulators per unit, plus associate valves and piping, in an elevated dose rate area with limited access (drywell - 777 feet) resulting in significant radiation exposure without any added benefit in safety. This inspection would thus not be consistent with ALARA practices.
>
> As an alternate to the VT-2 visual examination requirements of ASME Code, Table IWC-2500-1, LSCS will verify the ADS accumulator pressure per LSCS TS 3.5.1 and will also perform pressure decay testing on the ADS accumulators and associated piping and valves in accordance with surveillance procedure LTS-500-18 for LSCS, Unit 1, and LTS-500-19 for LSCS, Unit 2.

3.5.4 Staff Evaluation:

The ASME Code requires that a VT-2 visual examination be performed on all ASME Code, Class 2 pressure retaining components once during each inspection period. The VT-2 visual examination is a check for leakage of typically water-filled systems that must be performed at

---

[2] TS requirement documents are not included in this report.

normal operating system pressure. However, the ADS system accumulators and associated piping are compressed air filled components that are maintained at a constant pressure in order to respond to a demand for SRV actuation. As such, a standard VT-2 visual examination would not provide an adequate means to identify potential leakage. In order to test these components for potential leakage, a soap bubble test applied to all surfaces of the subject components would be necessary.

As an alternative, the licensee has proposed to use plant surveillance tests, which include verification of ADS accumulator pressures every 31 days, and system pressure decay tests every 18 months. The pressure decay tests include corrective measures such as soap bubble testing to identify and locate the cause of leakage, if accumulator pressures do not meet plant TS requirements.

The plant surveillance tests proposed by the licensee provide reasonable assurance that adequate pressure for SRV actuation is maintained. Because these tests are performed at frequencies greater than the ASME Code-required VT-2 visual examinations, an acceptable level of quality and safety is provided.

4.0 CONCLUSION

The staff has reviewed the licensee's submittal and concludes that ASME Code examination requirements are impractical for the subject components listed in RRs I3R-03, I3R-04, and I3R-08. It is further concluded that, if significant service-induced degradation were to occur, there is reasonable assurance that evidence of it would be detected by the alternative examinations proposed by the licensee. For these reasons, pursuant to 10 CFR 50.55a(g)(6)(i), RRs I3R-03, I3R-04, and I3R-08 relief is granted for the third 10-year ISI interval at LSCS, Units 1 and 2.

The staff has determined that granting relief for RRs I3R-03, I3R-04, and I3R-08 pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Additionally, for RRs I3R-09 and I3R-10, it is concluded that the licensee’s proposed alternatives to ASME Code requirements provide an adequate level of safety and quality. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the alternatives contained in RRs I3R-09 and I3R-10 are authorized for the third 10-year ISI interval at LSCS, Units 1 and 2.

All other requirements of the ASME Code, Sections III and XI for which relief has not been specifically requested remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: T. McLellan, NRR

Date: January 30, 2008

TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	TLR RR Sec.	System or Component	Exam. Category	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Disposition
I3R-03 (TAC MD5459, MD5460)	3.1	RHR, HPCS, and LPCS Pumps	C-G	C6.10	100% of full penetration pump casing welds	Surface	VT-1 or surface from ID when pump is disassembled	Granted 10 CFR 50.55a(g) (6)(i)
I3R-04 (TAC MD5389, MD5390)	3.2	RPV stabilizer bracket attachment welds	B-K	B10.10	100% of RPV attachment welds	Surface	VT-1 on accessible (52%) of welds	Granted 10 CFR 50.55a(g) (6)(i)
I3R-08 (TAC MD5463, MD5464)	3.3	Head flange seal leak detection system	C-H	C7.10	VT-2 during system pressure test each period	VT-2 Visual	VT-2 at static head with refuel canal filled during each outage	Granted 10 CFR 50.55a(g) (6)(i)
I3R-09 (TAC MD5465, MD5466)	3.4	CRD system accumulators and piping	C-H	C7.10	VT-2 during system pressure test each period	VT-2 Visual	Continuous pressure decay monitoring per Technical Specifications	Authorized 10 CFR 50.55a(a)(3)(i)
I3R-10 (TAC MD5467, MD5468)	3.5	SRV ADS accumulators and piping	C-H	C7.10	VT-2 during system pressure test each period	VT-2 Visual	Technical Specification surveillance procedures and pressure decay testing	Authorized 10 CFR 50.55a(a)(3)(i)

LaSalle County Station, Units 1 and 2

cc:

Corporate Distribution
Exelon Generation Company, LLC
via e-mail

LaSalle Distribution
Exelon Generation Company, LLC
via e-mail

LaSalle Senior Resident Inspector
U.S. Nuclear Regulatory Commission
via e-mail

Phillip P. Steptoe, Esquire
Sidley and Austin
One First National Plaza
Chicago, IL 60603

Assistant Attorney General
100 W. Randolph St. Suite 12
Chicago, IL 60601

Chairman
LaSalle County Board
707 Etna Road
Ottawa, IL 61350

Attorney General
500 S. Second Street
Springfield, IL 62701

Chairman
Illinois Commerce Commission
527 E. Capitol Avenue, Leland Building
Springfield, IL 62706

Robert Cushing, Chief, Public Utilities Division
Illinois Attorney General's Office
100 W. Randolph Street
Chicago, IL 60601

Illinois Emergency Management Agency
Division of Disaster Assistance &
Preparedness
via e-mail