



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

July 18, 2016

The Honorable Stephen G. Burns  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT:     REPORT ON THE SAFETY ASPECTS OF THE LICENSE RENEWAL  
                  APPLICATION OF THE LASALLE COUNTY STATION, UNITS 1 AND 2**

Dear Chairman Burns:

During the 635<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards (ACRS), July 6 - 8, 2016, we completed our review of the license renewal application for the LaSalle County Station, Units 1 and 2 (LaSalle) and the final safety evaluation report (SER) prepared by the NRC staff. Our Subcommittee on Plant License Renewal reviewed this matter during a meeting on April 19, 2016. During these reviews, we had the benefit of discussions with representatives of the NRC staff and the Exelon Generation Company, LLC (Exelon or the applicant). We also had the benefit of the referenced documents. This report fulfills the requirement of 10 CFR 54.25 that the ACRS review and report on all license renewal applications.

## **CONCLUSION AND RECOMMENDATION**

1. The programs established and committed to by Exelon to manage age-related degradation provide reasonable assurance that LaSalle can be operated in accordance with its current licensing bases for the period of extended operation without undue risk to the health and safety of the public.
  
2. Exelon's application for renewal of the operating licenses for LaSalle should be approved.

## **BACKGROUND**

LaSalle is located approximately 55 miles southwest of Chicago, Illinois. Units 1 and 2 are of a boiling water reactor (BWR) Type 5 (BWR/5) design. Each primary containment is a Mark II type, safety-related seismic Category I structure consisting of a steel dome head and post-tensioned concrete wall standing on a base mat of conventionally reinforced concrete. General Electric provided the nuclear steam supply system, and Sargent & Lundy designed and constructed the balance of the plant. Each unit has a licensed power output of 3,546 megawatts thermal, with a gross electrical output of approximately 1,207 megawatts. The NRC issued the construction permits (CPRR-99 and CPRR-100, respectively) for Units 1 and 2 on September 7, 1973. The NRC issued the operating licenses for Unit 1 and Unit 2 on April 17, 1982, and December 16, 1983, respectively.

In this application, Exelon requests renewal of the operating licenses (Facility Operating License Nos. NPF-11 and NPF-18) for a period of 20 years beyond the current expiration date of April 17, 2022, for Unit 1, and December 16, 2023, for Unit 2.

## **DISCUSSION**

In its final SER, dated June 2016, the staff documented its review of the license renewal application and other information submitted by the applicant and obtained through staff audits and inspections at the plant sites. The staff reviewed the completeness of the identification of structures, systems, and components (SSCs) that are within the scope of license renewal; the integrated plant assessment process; the identification of plausible aging mechanisms associated with passive, long-lived components; the adequacy of the Aging Management Programs (AMPs); and identification and assessment of Time-Limited Aging Analyses (TLAAs) requiring review.

Exelon's LaSalle license renewal application identified the SSCs that fall within the scope of license renewal. The application is largely consistent with the Generic Aging Lessons Learned (GALL) Report (NUREG-1801). Deviations and exceptions are documented and justified. Exelon will implement 46 AMPs for license renewal, comprised of 35 existing programs and 11 new programs. Nineteen of the 46 AMPs are consistent with the GALL Report without enhancements or exceptions. Nineteen AMPs are consistent with enhancements. Three AMPs are consistent with exceptions. Three AMPs are consistent with enhancements and exceptions. Two AMPs, Service Level III and Service Level III Augmented Coatings Monitoring and Maintenance Program, and Unit 2 Inspection of The American Society of Mechanical Engineers (ASME) Code Class 1 Small-Bore Piping Program, are plant-specific.

The license renewal application includes six programs with exceptions to the GALL Report. We reviewed these programs (Flow-Accelerated Corrosion, Reactor Vessel Surveillance, Compressed Air Monitoring, Fire Water System, Reactor Head Closure Stud Bolting, and Water Chemistry). We conclude that the six GALL programs with exceptions are acceptable.

The staff conducted license renewal audits and performed license renewal inspections at LaSalle. The audits verified the adequacy of the scoping and screening methodology for AMPs, the appropriateness of the aging management review, and the acceptability of the TLAAs. The inspection verified that the license renewal requirements are implemented appropriately. Both the inspection, and the report of that inspection, are thorough. Based on the audits, the inspection, and the staff reviews related to this license renewal application, the staff concluded in the final SER that the proposed activities will manage the effects of aging of SSCs identified in the application and that the intended functions of these SSCs will be maintained during the period of extended operation. The staff concluded that Exelon has demonstrated that the effects of aging at LaSalle will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation, as required by 10 CFR 54.21(a)(3).

Two open items were resolved between our subcommittee meeting on April 19, 2016, and our final review on July 6, 2016. The open items pertained to 1) enhanced visual testing examination coverage and 2) limited volumetric examination coverage. Resolution of the open items is as follows.

**EVT-1 Examination Coverage - BWR Vessel ID Attachment Welds Aging Management Program**

This item addresses changes to the BWR Vessel Internals Program (BWRVIP) guidance for EVT-1 viewing angle limitation that reduced effective examination coverage. Coverage requirements were not specified. The staff's concern was the program's ability to credit EVT-1s with 0% coverage; therefore, the staff raised the question of program adequacy. Exelon provided information to the NRC on February 25, 2016, in response to Request for Additional Information B.2.1.4-1 that 1) revised the procedure to eliminate the possibility that EVT-1 weld exam coverage of 0% could be acceptable and 2) communicated that visual inspections are performed of entire accessible Vessel ID attachment welds by a certified nondestructive examination examiner. EVT-1 examination coverage is maximized, consistent with BWRVIP-48-A and BWRVIP-03 guidance.

**Limited Volumetric Exam Coverage – BWR Stress Corrosion Cracking Aging Management Program**

This item addresses examination coverage for augmented weld inspections. The staff was concerned that program effectiveness could not be assured without documented bases for crediting limited weld inspections. Exelon provided information to the NRC on February 25, 2016, stating that 90% examination coverage is considered the minimum acceptable examination coverage, without evaluation, during the period of extended operation. If examination coverage is less than 90%, procedures require action to maximize the extent of examination coverage. In addition, if the examinations with less than 90% coverage are required to meet ASME Code Section XI requirements, a relief request is required. Exelon changed procedures for examinations that are required to meet the AMP, but not to meet ASME code requirements. The new procedures require an engineering technical evaluation equivalent to a relief request.

We agree with the staff that there are no issues related to the matters described in 10 CFR 54.29(a) (1) and (a) (2) that preclude renewal of the operating licenses for LaSalle. The programs established and committed to by Exelon provide reasonable assurance that LaSalle can be operated in accordance with its current licensing basis for the period of extended operation without undue risk to the health and safety of the public. The Exelon application for renewal of the operating licenses for LaSalle, Units 1 and 2 should be approved.

Sincerely,

/RA/

Dennis C. Bley  
Chairman

**REFERENCES**

1. Exelon Generation Company, LLC, LaSalle County Station, Units 1 and 2, "Application for Renewed Operating Licenses," December 9, 2014 (ML14343A840).
2. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the License Renewal of LaSalle County Station, Units 1 and 2," June 2016 (ML16126A503).
3. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report with Open items Related to the License Renewal of LaSalle County Station, Units 1 and 2," February 2016 (ML16053A439).
4. U.S. Nuclear Regulatory Commission, NUREG 1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2, December 2010 (ML103490041).
5. U.S. Nuclear Regulatory Commission, "Aging Management Programs Audit Report Regarding LaSalle County Station, Units 1 and 2 (TAC NOS. MF5347 and MF5346)," September 22, 2015 (ML15196A115).
6. U.S. Nuclear Regulatory Commission, "Scoping and Screening Methodology Audit Report Regarding LaSalle County Station, Units 1 and 2 (TAC NOS. MF5347 and MF5346)," May 8, 2015 (ML15104A782).
7. U.S. Nuclear Regulatory Commission, "LaSalle County Station, Units 1 and 2 License Renewal Scoping, Screening, and Aging Management Inspection Report 05000373/2015008; 05000374/2015008," November 18, 2015 (ML15323A064).
8. U.S. Nuclear Regulatory Commission, NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 2, December 2010 (ML103490036).
9. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," Revision 1, September 2005 (ML082950585).

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Letter to the Honorable Stephen G. Burns, Chairman, NRC, from Dennis C. Bley, Chairman, ACRS, dated July 18, 2016

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