

RS-17-024

10 CFR 50.90

February 16, 2017

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Supplement to License Amendment Request for Permanent Extension of Type A and Type C Leak Rate Test Frequencies Regarding Hardened Containment Vent System (HCVS) Modifications and Installation of Primary Containment Isolation Valves (PCIVs)

- References:
- 1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specifications 5.5.13, "Primary Containment Leakage Rate Testing Program," for Permanent Extension of Type A and Type C Leak Rate Test Frequencies," dated October 26, 2016 (ADAMS Accession No. ML16300A200)
 - 2) EA-13-109, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," dated June 6, 2013 (ADAMS Accession No. ML13143A321)

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Renewed Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2. The proposed change revises Technical Specifications 5.5.13, "Primary Containment Leakage Rate Testing Program," to allow for the permanent extension of the Type A Integrated Leak Rate Testing (ILRT) and Type C Leak Rate Testing frequencies.

In Reference 2, the NRC issued Order EA-13-109. In response to Order EA-13-109, EGC is taking certain actions to ensure that its BWRs with Mark I and Mark II containments have a hardened containment vent system (HCVS) to remove decay heat from the containment and maintain control of containment pressure within acceptable limits following events that result in loss of active containment heat removal capability while maintaining the capability to operate under severe accident conditions resulting from an Extended Loss of AC Power.

As part of the HCVS modifications, two new primary containment isolation valves (PCIVs) will be installed on each LSCS unit. These installed PCIVs will be added to the 10 CFR 50 Appendix J program. The Unit 2 PCIVs associated with the spring 2017 refueling outage (L2R16) HCVS modification are installed on LSCS, Unit 2, but not yet operable. The PCIVs associated with the Unit 1 HCVS modification are scheduled to be installed at LSCS, Unit 1, in the spring 2018

refueling outage (L1R17). The information regarding the PCIV installation was not known at the time of submittal of Reference 1.

The Attachment to this letter provides information regarding the LSCS, Unit 1 and Unit 2, HCVS modifications and installation of the PCIVs.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment 1 of Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendments do not involve a significant hazards consideration.

There are no regulatory commitments contained within in this letter. Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

Respectfully,

A handwritten signature in dark ink, appearing to read 'D. M. Gullott', followed by a long horizontal line extending to the right.

David M. Gullott
Manager – Licensing
Exelon Generation Company, LLC

Attachment: Supplement Regarding Hardened Containment Vent System (HCVS) Modifications and Installation of Primary Containment Isolation Valves (PCIVs)

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector, LaSalle County Station

ATTACHMENT

Supplement Regarding Hardened Containment Vent System (HCVS) Modifications and Installation of Primary Containment Isolation Valves (PCIVs)

On October 26, 2016, Exelon Generation Company, LLC (EGC) requested an amendment to Renewed Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2 (Reference 1). The proposed change revises Technical Specifications (TS) 5.5.13, "Primary Containment Leakage Rate Testing Program," to allow for the permanent extension of the Type A Integrated Leak Rate Testing (ILRT) and Type C Leak Rate Testing frequencies.

On June 6, 2013, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-13-109, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," to all operating Boiling Water Reactor (BWR) Licensees with Mark I and Mark II containments (Reference 2). The Order directed EGC to require its BWRs with Mark I and Mark II containments to take certain actions to ensure that these facilities have a hardened containment vent system (HCVS) to remove decay heat from the containment and maintain control of containment pressure within acceptable limits following events that result in loss of active containment heat removal capability. The HCVS must be capable of operation under severe accident (SA) conditions resulting from an Extended Loss of AC Power (ELAP).

The Order requirements are applied in a phased approach where:

- "Phase 1 involves upgrading the venting capabilities from the containment wetwell to provide reliable, severe accident capable hardened vents to assist in preventing core damage and, if necessary, to provide venting capability during severe accident conditions". (Completed "no later than startup from the second refueling outage that begins after June 30, 2014, or June 30, 2018, whichever comes first.") These modifications make changes to the LSCS Containment Leakage Rate Testing Program and are described below.
- "Phase 2 involves providing additional protections for severe accident conditions through installation of a reliable, severe accident capable drywell vent system or the development of a reliable containment venting strategy that makes it unlikely that a licensee would need to vent from the containment drywell during severe accident conditions." (Completed "no later than startup from the first refueling outage that begins after June 30, 2017, or June 30, 2019, whichever comes first.") Phase 2 actions do not involve the LSCS containment structure or Containment Leakage Rate Testing Program and will not be discussed further in this supplement.

LSCS venting actions for the EA-13-109 severe accident capable venting scenario can be summarized by the following:

- The HCVS will be initiated via manual action from the Main Control Room (MCR) or Remote Operating Station (ROS) at the appropriate time based on procedural guidance in response to plant conditions from observed or derived symptoms.
- The vent will utilize Containment Parameters of Pressure and Wetwell Level from the MCR instrumentation to monitor effectiveness of the venting actions.

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- The vent operation will be monitored by HCVS Primary Containment Isolation Valve (PCIV) position, vent line temperature, and effluent radiation levels.
- The PCIVs are fail-closed air-operated valves (AOVs) (gas-to-open, spring to close), whose motive force will be provided by compressed nitrogen with enough installed capacity to operate for 24 hours. Replenishment will be by use of portable equipment once the installed capacity is exhausted.
- Venting actions will be capable of being maintained for a sustained period of up to 7 days.

An Engineering Change was processed to add a HCVS to LSCS, Units 1 and 2. The HCVS will provide a means to remove decay heat and maintain control of containment pressure within acceptable limits following events that result in loss of active containment heat removal capability or ELAP. The HCVS will have two Primary Containment Isolation Valves (PCIVs) and a rupture disc to maintain Secondary Containment. An argon purge system will be used after each vent cycle to ensure that a combustible mixture of hydrogen and oxygen is not present in the HCVS vent line.

The HCVS is designed to allow pressure testing of the piping, stroke testing of all AOVs, leak testing of the PCIVs and testing of system operation. The HCVS instrumentation is located within accessible areas of the Reactor Building and Auxiliary Building to allow for surveillance testing, calibration, and maintenance.

The HCVS modifications will install two new PCIVs for each unit at LSCS (i.e., 1PC009A and 1PC010A for Unit 1; 2PC009A and 2PC010A for Unit 2). The guidance contained within Section 6.2 of NEI 13-02, Revision 1, "Industry Guidance for Compliance with Order EA-13-109," (Reference 3) indicates that primary and secondary containment required leakage testing is covered under existing design basis testing programs. Therefore, the installed PCIVs will be added to the 10 CFR 50 Appendix J program and are to be leak tested in accordance with the existing criteria for 10 CFR 50 Appendix J.

The design basis temperature and pressure of the new HCVS piping up to and including the PCIVs is the same as the 24-inch vacuum breaker piping to which it connects. The existing criteria for the test pressure are based on the peak calculated containment internal pressure for the design basis loss of coolant accident (P_a), which is 42.6 psig. This value is documented in the LSCS TS 5.5.13, "Primary Containment Leakage Rate Testing Program." Even though the design pressure of the HCVS outboard of the PCIVs is based on the Primary Containment Pressure Limit (PCPL) of 60 psig, leak rate testing of the PCIVs is not required at this higher pressure per generic assumption 049-13 of HCVS-FAQ-06 (attached to NEI 13-02, Revision 1 – Reference 3). By extension, the initial and ongoing pressure tests required by the Section XI inservice inspection (ISI) program are also limited to the existing criteria based on design basis requirements.

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The PCIVs associated with the Unit 2 spring 2017 refueling outage (L2R16) HCVS modification are installed on LSCS, Unit 2, but are not yet operable. The PCIVs associated with the Unit 1 HCVS modification are scheduled to be installed on LSCS, Unit 1, in the spring 2018 refueling outage (L1R17). The PCIVs will be operable and will be added to the 10 CFR 50 Appendix J program by the conclusions of L2R16 and L1R17, respectively.

The information regarding the PCIV installation was not known at the time of submittal of Reference 1.

The HCVS modification is expected to lower Core Damage Frequency (CDF) and lead to greater margins to risk metric thresholds. The HCVS method of heat removal is not credited in the Unit 1 and Unit 2 LSCS PRA models used to calculate ILRT extension risk metrics. A 2015 application specific LSCS PRA model was created to estimate the CDF impact of the HCVS modification. There was a meaningful reduction in CDF. Based on the risk analysis performed in 2015, it is expected that ILRT risk metric margins would increase.

References:

- 1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specifications 5.5.13, "Primary Containment Leakage Rate Testing Program," for Permanent Extension of Type A and Type C Leak Rate Test Frequencies," dated October 26, 2016 (ADAMS Accession No. ML16300A200)
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- 3) NEI 13-02, Revision 1, "Transmittal of NEI 13-02, Industry Guidance for Compliance with Order EA-13-109, Revision 1," dated April 2015 (ADAMS Accession No. ML15113B318)