



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 19, 2010

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS
RE: REQUEST FOR LICENSE AMENDMENT TO TECHNICAL
SPECIFICATION 3.5.1, "EMERGENCY CORE COOLING SYSTEMS (ECCS)
OPERATING" (TAC NOS. ME0994 AND ME0995)

Dear Mr. Pardee:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 196 to Facility Operating License No. NPF-11 and Amendment No. 183 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated March 26, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090861004), as supplemented by letter dated October 28, 2009 (ADAMS Accession No. ML093030036).

The amendments revise Technical Specification 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating," to delete the existing allowance with the Automatic Depressurization System accumulator backup compressed gas system that currently allows a completion time of 72 hours to restore bottle pressure to ≥ 500 psig.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script, appearing to read "C. Goodwin".

Cameron S. Goodwin, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosures:

1. Amendment No. 196 to NPF-11
2. Amendment No. 183 to NPF-18
3. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 196
License No. NPF-11

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated March 26, 2009, as supplemented by letter dated October 28, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-11 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 196 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Stephen J. Campbell", with a stylized flourish at the end.

Stephen J. Campbell, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: March 19, 2010



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 183
License No. NPF-18

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated March 26, 2009, as supplemented by letter dated October 28, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 183 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Stephen J. Campbell, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: March 19, 2010

ATTACHMENT TO LICENSE AMENDMENT NOS. 196 AND 183

FACILITY OPERATING LICENSE NOS. NPF-11 AND NPF-18

DOCKET NOS. 50-373 AND 50-374

Replace the following pages of the Facility Operating Licenses and Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License NPF-11
Page 3

License NPF-18
Page 3

TSs
3.5.1-2
3.5.1-3
3.5.1-4

Insert

License NPF-11
Page 3

License NPF-18
Page 3

TSs
3.5.1-2
3.5.1-3
3.5.1-4

- (4) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station, Units 1 and 2.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal).
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 196 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Conduct of Work Activities During Fuel Load and Initial Startup

The licensee shall review by committee all Unit 1 Preoperational Testing and System Demonstration activities performed concurrently with Unit 1 initial fuel loading or with the Unit 1 Startup Test Program to assure that the activity will not affect the safe performance of the Unit 1 fuel loading or the portion of the Unit 1 Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, security and health physics, with respect to performance of the activity concurrently with the Unit 1 fuel loading or the portion of the Unit 1 Startup Program being performed. The committee for the review shall be composed of at least three members, knowledgeable in the above areas, and who meet the qualifications for professional-technical personnel specified by

- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70 possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station Units 1 and 2.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal). Items in Attachment 1 shall be completed as specified. Attachment 1 is hereby incorporated into this license.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 183 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Conduct of Work Activities During Fuel Load and Initial Startup

The licensee shall review by committee all Unit 2 Preoperational Testing and System Demonstration activities performed concurrently with Unit 2 initial fuel loading or with the Unit 2 Startup Test Program to assure that the activity will not affect the safe performance of the Unit 2 fuel loading or the portion of the Unit 2 Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, security and health physics, with respect to performance of the activity concurrently with the Unit 2 fuel loading or the portion of the Unit 2 Startup Program being performed. The committee for the review shall be composed of at least three members, knowledgeable in the above areas, and who meet the qualifications for professional-technical personnel specified by section 4.4 of ANSI N18.7-1971. At least one of these three shall be a senior member of the Assistant Superintendent of Operation's staff.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. High Pressure Core Spray (HPCS) System inoperable.</p>	<p>B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE.</p> <p><u>AND</u></p> <p>B.2 Restore HPCS System to OPERABLE status.</p>	<p>Immediately</p> <p>14 days</p>
<p>C. Two low pressure ECCS injection/spray subsystems inoperable.</p>	<p>C.1 Restore one low pressure ECCS injection/spray subsystem to OPERABLE status.</p>	<p>72 hours</p>
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p>	<p>D.1 Be in MODE 3.</p>	<p>12 hours</p>
<p>E. One required ADS valve inoperable.</p>	<p>E.1 Restore required ADS valve to OPERABLE status.</p>	<p>14 days</p>
<p>F. Required Action and associated Completion Time of Condition E not met.</p>	<p>F.1 Be in MODE 3.</p>	<p>12 hours</p>

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY															
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve.	31 days															
SR 3.5.1.2	Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days															
SR 3.5.1.3	Verify ADS accumulator supply header pressure is \geq 150 psig.	31 days															
SR 3.5.1.4	Verify ADS accumulator backup compressed gas system bottle pressure is \geq 500 psig. <u>OR</u> Verify ADS accumulator reserve bottle pressure is \geq 1100 psig.	31 days															
SR 3.5.1.5	Verify each ECCS pump develops the specified flow rate against the specified test line pressure. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><u>SYSTEM</u></th> <th><u>FLOW RATE</u></th> <th><u>TEST LINE PRESSURE</u></th> </tr> </thead> <tbody> <tr> <td>LPCS</td> <td>\geq 6350 gpm</td> <td>\geq 290 psig</td> </tr> <tr> <td>LPCI</td> <td>\geq 7200 gpm</td> <td>\geq 130 psig</td> </tr> <tr> <td>HPCS (Unit 1)</td> <td>\geq 6250 gpm</td> <td>\geq 370 psig</td> </tr> <tr> <td>HPCS (Unit 2)</td> <td>\geq 6200 gpm</td> <td>\geq 330 psig</td> </tr> </tbody> </table>	<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>TEST LINE PRESSURE</u>	LPCS	\geq 6350 gpm	\geq 290 psig	LPCI	\geq 7200 gpm	\geq 130 psig	HPCS (Unit 1)	\geq 6250 gpm	\geq 370 psig	HPCS (Unit 2)	\geq 6200 gpm	\geq 330 psig	In accordance with the Inservice Testing Program
<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>TEST LINE PRESSURE</u>															
LPCS	\geq 6350 gpm	\geq 290 psig															
LPCI	\geq 7200 gpm	\geq 130 psig															
HPCS (Unit 1)	\geq 6250 gpm	\geq 370 psig															
HPCS (Unit 2)	\geq 6200 gpm	\geq 330 psig															

(continued)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.196 TO FACILITY OPERATING LICENSE NO. NPF-11

AND AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. NPF-18

EXELON GENERATION COMPANY, LLC

LASALLE COUNTY STATION, UNITS 1 AND 2

DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, the Commission) dated March 26, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090861004) (Reference 1), as supplemented by letter dated October 28, 2009 (ADAMS Accession No. ML093030036) (Reference 2), Exelon Generation Company, LLC (the licensee), requested changes to the technical specifications (TSs) and surveillance requirements (SRs) for LaSalle County Station (LSCS), Units 1 and 2. The proposed changes would revise TS 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating," to delete the existing allowance with the Automatic Depressurization System (ADS) accumulator backup compressed gas system that currently allows a completion time (CT) of 72 hours to restore bottle pressure to ≥ 500 psig.

The October 28, 2009, supplement, contained clarifying information and did not change the NRC staff's initial proposed finding of no significant hazards consideration.

2.0 PROPOSED CHANGES

The existing TS 3.5.1, Condition D, which allowed 72 hours to restore bottle pressure to ≥ 500 psig, has been proposed to be deleted and the existing TS 3.5.1, Condition H, has been proposed to be revised to include the condition of inoperability of the ADS accumulator backup compressed gas system. The revisions to existing Condition H will require that if the ADS accumulator backup compressed gas system is inoperable, the affected unit will be required to be in MODE 3 within 12 hours and the reactor steam dome pressure will be required to be reduced to ≤ 150 psig within 36 hours.

SR 3.5.1.4 has been proposed to be modified to add an additional requirement to either maintain a minimum ADS accumulator backup compressed gas system bottle pressure of 500 psig or a minimum ADS accumulator reserve bottle pressure of 1100 psig. With the backup compressed gas system bottle pressure of ≥ 500 psig or the reserve bottle pressure of ≥ 1100 psig, there will be sufficient nitrogen available for any postulated event.

Due to the deletion of the existing TS 3.5.1 Condition D, the remaining Conditions in the LSCS TS 3.5.1 have been proposed to be re-lettered, as appropriate.

3.0 REGULATORY EVALUATION

The regulatory requirements associated with emergency core cooling system (ECCS) are based on Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," and General Design Criteria (GDC) 35, "Emergency Core Cooling," of Appendix A, "General Design Criteria for Nuclear Power Plants," from 10 CFR Part 50.

The NRC's acceptance criteria for design-basis loss-of-coolant accident (LOCA) are based on: (1) 10 CFR Part 50.46, which establishes standards for the calculation of ECCS performance and acceptance criteria for that calculated performance; (2) 10 CFR Part 50, Appendix K, "ECCS Evaluation Models," which establishes required and acceptable features of evaluation models for heat removal by the ECCS after the blowdown phase of a LOCA; and (3) GDC 35, which requires that a system to provide abundant emergency core cooling be provided to transfer heat from the reactor core following any LOCA at a rate so that fuel clad damage that could interfere with continued effective core cooling will be prevented.

Section 182a of the Atomic Energy Act (Act) requires applicants for nuclear power plant operating licenses to include TSs as part of the license. These TSs are derived from the plant safety analyses.

Section 50.36 of 10 CFR contains the requirements for the content of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five categories: (1) safety limits (SLs), limiting safety system settings (LSSSs), and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls.

10 CFR 50.36(c)(2)(ii) lists the criteria used to determine whether or not LCOs must be established in TSs for items related to plant operation. If the item falls in to one of the four categories below, an LCO must be established in the TSs to ensure the lowest functional capability or performance level of equipment required for safe operation of the facility will be met. The four criteria are:

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3: A structure, system, or component (SSC) that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: A SSC which operating experience or probabilistic risk assessment (PRA) has shown to be significant to public health and safety.

Section 50.36 of 10 CFR does not specify each particular requirement to be included in a plant's TSs, nor does it specify the format of a plant's TS. Rather, the NRC publishes generic guidance on TS format and content. The NRC published a set of Standard Technical Specifications (STS) in NUREG-1434, Revision 3 "Standard Technical Specifications, General Electric Plants." The STS are a guide to what a plant's TSs should contain with regard to format and content. The STS are not requirements in a regulatory sense, but licensees adopting portions of the improved STS to existing TSs should adopt all related requirements, as applicable, to achieve a high degree of standardization and consistency.

The NRC staff reviewed the proposed changes for compliance with 10 CFR 50.36 and agreement with the guidance in the STS. In general, licensees cannot justify TS changes solely on the basis of adopting the model STS. To ensure proper adoption of the STS, the NRC staff makes a determination that proposed changes maintain adequate safety. Changes that result in relaxation (less restrictive condition) of current TS requirements require detailed justification as to why or how the change maintains adequate safety.

Licensees may propose revisions to the TSs to adopt improved STS format and content provided that plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative or provides clarification (i.e., no requirements are materially altered), (2) the change is more restrictive than the licensee's current requirement, or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The NRC staff reviews the proposed revision and determines whether or not the proposed revision is acceptable. If the NRC staff determines that the proposed revision is acceptable, the NRC staff changes the licensee's TSs. The detailed application of this general framework, and additional specialized guidance, are discussed in Section 4.0 in the context of specific proposed changes.

The licensee's submittal and response to the NRC staff's request for additional information (RAI), provided sufficient material for the NRC staff to perform the review and evaluate the licensee's application in accordance with the regulatory guidelines. The NRC staff's review found that the information submitted by the licensee was consistent with the regulatory requirements.

4.0 TECHNICAL EVALUATION

The licensee's proposed change of the LSCS TS addresses a non-conservatism related to the ADS mode of safety relief valve (SRV) operation. In order to correct this non-conservatism, and to ensure that the safety function of the ADS SRVs is maintained during any postulated condition, the existing allowance provided in the TS related to the ADS accumulator backup compressed gas system that allowed a CT of 72 hours to restore bottle pressure to ≥ 500 psig was deleted. The NRC staff has reviewed the proposed change and determined that it is a more restrictive change than the licensee's current requirements.

The existing non-conservatism in the TS was the result of an interface between the pneumatic supply for the ADS and the pneumatic supply utilized by the Division 2 SRV Low-Low Setpoint (LLS). This interface does not support the current basis for the CT of 72 hours associated with inoperability of the ADS accumulator backup compressed gas system (i.e., nitrogen bottle banks). One of the SRV LLS design functions is that it does not interfere with the design function of ADS. However, when the LLS logic energizes the Division 2 solenoid (i.e., Solenoid

B) compressed gas from the associated ADS accumulator is utilized to perform the LLS SRV function. The safety concern is that sufficient compressed nitrogen would not be available following the initial relief function to support both the LLS and ADS function of the SRVs, and consequently, a condition could potentially exist where the safety function of the ADS could not be fulfilled. The ADS/LLS interface only affects the Division 2 LLS logic, and therefore, does not affect all SRVs.

The NRC staff requested that the licensee clarify how the existing deficiency in the LSCS TS was first identified, and whether the licensee is aware of any precedence of similar deficiency that existed in other plants. The licensee stated that the deficiency was identified by LSCS personnel in June 2006, during a review of the design basis of the ADS, and that the licensee is not aware of another plant having the same deficiency (Reference 2).

This issue affects five of the seven ADS SRVs (i.e., SRVs C, D, E, S, and U) as they are supplied by the ADS accumulator back-up compressed gas system (i.e., nitrogen bottle banks) through Solenoid B and perform both LLS and ADS functions. These five ADS SRVs accumulators are supplied by two separate nitrogen bottle banks designated as the south bottle bank and the north bottle bank.

The south bottle bank supplies nitrogen to the ADS accumulators associated with affected SRVs C, E, and U. This bottle bank would supply nitrogen to support the initial lift of the three affected SRVs at their relief setpoint, the subsequent lifts of one SRV at its reduced LLS setpoint, and provide makeup for leakage while maintaining the ADS accumulators pressurized to support subsequent ADS operation. The north bottle bank supplies nitrogen to the ADS accumulators associated with the affected ADS SRVs D and S. This bottle bank would supply nitrogen to support the initial lift of the affected two SRVs at their relief setpoint, the subsequent lifts of one SRV at its reduced LLS setpoint, and provide make-up for leakage while maintaining the ADS accumulators pressurized to support subsequent ADS operation.

Contrary to the justification provided for the existing TS 3.5.1 Condition D, which is based on the ADS accumulator backup compressed gas system (i.e., nitrogen bottle banks) supporting long-term cooling, the licensee has determined that the system is also necessary to refill the ADS accumulators to support the short-term LLS and ADS function of the SRVs. Therefore, should the ADS accumulator back-up compressed gas system (i.e., the nitrogen bottle banks) not be available or not contain sufficient compressed nitrogen, a condition could potentially exist where the safety function of the ADS SRVs could not be fulfilled.

This issue does not affect the remaining two ADS SRVs (i.e., SRVs R and V). These SRVs do not perform a LLS function. The relief function for these valves is controlled by Solenoid C, which is supplied by the non-ADS accumulator. The Division 1 LLS logic and ADS do not have a similar interface and remain unaffected by this issue.

The existing non-conservatism in the TS can impact a specific LOCA inside the primary containment with a concurrent loss of offsite power and a random failure that results in the inoperability of one of the two ADS bottle banks. The LOCA in question is a small flaw/crack on the high-pressure core spray (HPCS) injection line of sufficient size that results in the following conditions:

- sufficient loss of injection flow such that HPCS does not provide adequate makeup to the reactor vessel and
- the small flaw/crack on the HPCS injection line does not allow sufficient flow from the reactor vessel to allow depressurization such that ADS is not required.

During this type of event, both the low and medium LLS SRVs would be needed to remain functional to ensure sufficient nitrogen remains available to support LLS and ADS actuations to mitigate the event.

In response to the NRC staff's RAI (Reference 2), the licensee clarified that the limiting peak cladding temperature LOCAs are not the limiting LOCA for the ADS/LLS interface issue. The licensee stated that:

The most limiting scenario for the ADS/LLS interface issue is a small break LOCA in the HPCS injection piping concurrent with a single-failure that prevents one of the ADS bottle banks from being capable of refilling the ADS accumulators it serves. This hypothetical HPCS injection piping LOCA would be a small-break LOCA. This particular small-break LOCA would be large enough to cause HPCS to be inoperable, but not large enough to rapidly depressurize the reactor pressure vessel. The break is limiting with respect to the subject ADS/LLS interface. This break size would be included within the complete spectrum of postulated break sizes and locations considered in the evaluation of ECCS performance.

The licensee further added that the Main Steamline Break outside of containment (Updated Final Safety Analysis Report Section 15.6.4, "Steam System Pipe Break Outside the Secondary Containment") with a single-failure of the HPCS System and no operator action is the LSCS licensing basis event that establishes the maximum number of SRV actuations prior to ADS.

The licensee reported that the following modifications were completed for both LSCS Units 1 and 2 ADS to enhance the ADS compressed gas system:

- A reserve bottle at each bottle bank was added that can be utilized during bottle replacement. The reserve nitrogen bottle is valved in during the replacement of the four bottles currently installed in each bottle bank to allow for bottle change.
- Although the revised TS SR 3.5.1.4 requires a minimum bottle pressure of 500 psig for each bottle bank, LSCS administratively controls bottle pressure at a higher value to provide additional margin. In addition, the pressure switch setpoint has been increased to the administrative limit to annunciate in the control room when the pressure in the bottle bank is approaching the bottle change-out pressure.
- A local pressure indicator for the reserve nitrogen bottle has been installed to permit verification of the reserve nitrogen bottle pressure.
- A local pressure indicator has been installed at each emergency

pressurization station. This provides another means to verify nitrogen bottle bank pressure. The emergency pressurization stations are located in an environmentally controlled area that is accessible during all conditions.

The licensee stated that to further ensure that the safety function of the ADS SRVs is maintained during bottle replacement operations, the reserve nitrogen bottle is valved-in during the replacement of the four bottles currently installed in each bottle bank and allows bottle replacement without affecting the operating unit. Before it is placed into service, the pressure in the reserve bottle is checked to verify that it contains a sufficient quantity of compressed gas. Once valved-in, the reserve bottle is verified to have a minimum bottle pressure of 1100 psig. This ensures that sufficient usable nitrogen exists to support both the LLS and ADS function of the SRVs plus the assumed design leakage, assuming no operator action. With the backup compressed gas system bottle pressure of ≥ 500 psig or the reserve bottle pressure of ≥ 1100 psig, there is sufficient nitrogen available for any postulated event involving LLS actuation and a subsequent need for ADS.

The NRC staff requested that the licensee explain how the minimum required pressure (500 psig for backup and 1100 psig for reserve bottles) were determined to be sufficient pressure in order to perform its intended safety function. The licensee described the methodology in Reference 2, and the NRC staff found it acceptable. Two models were used to determine the volume consumed per actuation, the isothermal model and the adiabatic model. Since the adiabatic model yields more conservative results, it was used to determine the volume of usable compressed nitrogen the bottle(s) must provide. The required pressure in each backup compressed gas system bottle bank (consisting of four bottles per bottle bank) of 2500 psig or the reserve bottle pressure of ≥ 1100 psig yields the required volume and assures the ADS accumulators remain pressurized to 150 psig.

In response to the RAI (Reference 2), the licensee confirmed that the piping and components associated with the reserve bottle are part of the backup compressed gas system, and that the ADS accumulator backup compressed gas system is classified as safety-related and there are no current plans to change its classification.

The licensee further stated that compensatory actions are in place that meet NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," and will remain in effect until this license amendment is implemented following NRC approval. The modifications to the ADS SRV accumulator backup compressed gas system and the proposed changes to TS 3.5.1, SR 3.5.1.4 and the associated TS Bases and Technical Requirements Manual will ensure that the safety function of the ADS SRVs is maintained during any postulated condition.

The NRC staff's review of the information submitted in the application and in response to the staff's RAIs, as discussed in this safety evaluation, concluded that the licensee's proposed amendment to update LSCS TS 3.5.1 is in compliance with the ECCS requirements delineated in 10 CFR Part 50, Appendix A, and 10 CFR 50.46. The NRC staff further concludes that the proposed LSCS TS amendment will correct an existing non-conservatism in the TS 3.5.1, and will result in an improved and more restrictive LSCS TS which complies with the regulatory requirements of 10 CFR 50.36. The proposed amendment of the LSCS TS is, therefore, acceptable.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of the facilities components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (74 FR 46242; September 8, 2009). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

8.0 REFERENCES

1. Letter from P.R. Simpson (EGC) to USNRC, "Request for a License Amendment to Technical Specification 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating," March 26, 2009. (ADAMS Accession No. ML090861004)
2. Letter from P.R. Simpson (EGC) to USNRC, "Additional Information Supporting the License Amendment to Technical Specification 3.5.1, Emergency Core Cooling Systems (ECCS) Operating," October 28, 2009. (ADAMS Accession No. ML093030036)

Principal Contributor: M. Razzaque, NRR
M. Hamm, NRR

Date: March 19, 2010

March 19, 2010

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS
RE: REQUEST FOR LICENSE AMENDMENT TO TECHNICAL
SPECIFICATION 3.5.1, "EMERGENCY CORE COOLING SYSTEMS (ECCS)
OPERATING" (TAC NOS. ME0994 AND ME0995)

Dear Mr. Pardee:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 196 to Facility Operating License No. NPF-11 and Amendment No. 183 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated March 26, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090861004), as supplemented by letter dated October 28, 2009 (ADAMS Accession No. ML093030036).

The amendments revise Technical Specification 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating," to delete the existing allowance with the Automatic Depressurization System accumulator backup compressed gas system that currently allows a completion time of 72 hours to restore bottle pressure to ≥ 500 psig.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,
/RA/
Cameron S. Goodwin, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosures:

- 1. Amendment No. 196 to NPF-11
 - 2. Amendment No. 183 to NPF-18
 - 3. Safety Evaluation
- cc w/encls: Distribution via ListServ

DISTRIBUTION:

PUBLIC LPL3-2 R/F RidsNrrPMLaSalle Resource
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RidsAcrcsAcnw_MailCTR Resource
ADAMS Accession No. ML100541668 NRR-058

*By memo dated

OFFICE	LPL3-2/PM	LPL3-2/LA	DIRS/ITSB	DSS/SRXB	DSS/SBPB	DSS/SNPB	OGC	LPL3-2/BC
NAME	CGoodwin	THarris	RElliott	GCranston*	GCasto	AMendiola	BHarris	CGratton for SCampbell
DATE	3/15/10	3/4/10	3/6/10	02/16/10	3/5/10	3/5/10	3/11/10	3/19/10