March 4, 2004

Mr. Christopher M. Crane, President
and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2, ISSUANCE OF AMENDMENTS RE: EMERGENCY CORE COOLING SYSTEM INSTRUMENTATION (TAC NOS. MB8198 AND MB8199)

Dear Mr. Crane:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 165 to Facility Operating License No. NPF-11 and Amendment No. 151 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 31, 2003, as supplemented by letter dated June 26, 2003.

The amendments increase the upper limit associated with Technical Specifications Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.e, "HPCS System Flow Rate - Low (Bypass)," Allowable Value from less than or equal to ($\leq$) 1704 gallons per minute (gpm) to $\leq$ 2194 gpm.

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/

William A. Macon, Jr., Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos.: 50-373 and 50-374

Enclosures: 1. Amendment No. 165 to NPF-11
2. Amendment No. 151 to NPF-18
3. Safety Evaluation

cc w/encls: See next page

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The amendments increase the upper limit associated with Technical Specifications Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.e, "HPCS System Flow Rate - Low (Bypass)," Allowable Value from less than or equal to ($\leq$) 1704 gallons per minute (gpm) to $\leq$ 2194 gpm.

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Sincerely,
/RA/

William A. Macon, Jr., Project Manager, Section 2
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Office of Nuclear Reactor Regulation

Docket Nos.: 50-373 and 50-374

Enclosures: 1. Amendment No. 165 to NPF-11
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cc w/encls: See next page

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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 165
License No. NPF-11

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated March 31, 2003, as supplemented by letter dated June 26, 2003, 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-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. 165, 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

/RA by DPickett for/

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

Attachment: Changes to the Technical Specifications

Date of Issuance: March 4, 2004

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 151
License No. NPF-18

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated March 31, 2003, as supplemented by letter dated June 26, 2003, 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. 151, 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

/RA by DPickett for/

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

Attachment: Changes to the Technical Specifications

Date of Issuance: March 4, 2004

ATTACHMENT TO LICENSE AMENDMENT NOS. 165 AND 151

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

DOCKET NOS. 50-373 AND 50-374

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by amendment number and contain marginal lines indicating the area of change.

Remove Page	Insert Page
3.3.5.1-10	3.3.5.1-10

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 165 TO FACILITY OPERATING LICENSE NO. NPF-11

AND AMENDMENT NO. 151 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 application dated March 31, 2003 (Ref. 1), as supplemented by letter dated June 26, 2003 (Ref. 2), Exelon Generation Company, LLC (the licensee) requested changes to the Technical Specifications (TS) for the LaSalle County Station, Units 1 and 2 (LSCS). The supplement dated June 26, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on May 13, 2003 (68 FR 25654).

The proposed amendments would revise the Technical Specifications. Specifically, the proposed change will increase the upper limit associated with TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.e, "HPCS System Flow Rate - Low (Bypass)," Allowable Value from less than or equal to ($\leq$) 1704 gallons per minute (gpm) to $\leq$ 2194 gpm.

The proposed change increases the Allowable Value band to account for instrumentation deadband, as-left setting tolerances and setpoint drift and resolve historical difficulties during calibration. The current Allowable Value was initially provided in the LSCS TS during conversion to Improved Technical Specifications (ITS) format. This value was based on vendor supplied data and believed at the time to adequately account for these parameters. The upper Allowable Value limit is being increased based on historical performance data for the High Pressure Core Spray (HPCS) system flow switches. The increase in the allowed bypass flow rate does not affect the capability of the HPCS system in performing its intended safety function.

2.0 REGULATORY EVALUATION

The staff finds that the licensee in Section 4.0 of Attachment 2 of its submittal identified the applicable regulatory requirements. The licensee cites Section 50.36(c)(2)(ii)(c), Criterion 3 of Title 10 of the *Code of Federal Regulations* (10 CFR) as its regulatory basis for this license amendment. According to 10 CFR 50.36(c)(2)(ii)(c), "Criterion 3," requires that a structure, system, or component that is part of the primary success path and which functions or actuates

to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier must be included in a licensee's TS.

The HPCS system, with other emergency core cooling systems as backups, is designed to maintain reactor water inventory during small- and intermediate-break loss-of -coolant accidents (LOCA), isolation transients, and loss of feedwater (LOFW) events. The HPCS system is designed to pump water into the reactor vessel through a spray sparger over a wide range of reactor operating pressures. The HPCS system also serves as a backup to the Reactor Core Isolation Cooling System (RCIC) system. The system is designed to operate from normal offsite auxiliary power or from a dedicated emergency diesel generator.

The HPCS system is required to start and operate reliably over its design operating range. During the LOFW event and isolation transients, the RCIC/HPCS maintains water level above the top of active fuel. For the Main Steam Isolation Valve closure, the Safety Relief Valves open and close as required to control pressure and HPCS eventually restores water level. The licensee will assure that the required LOCA analyses HPCS flow rates of approximately 1300 gpm at 1080 psig of reactor pressure and 5400 gpm at 370 psig of reactor pressure will be available as a result of this change.

The staff has used the following regulatory basis for its evaluation of the licensee's amendment request:

> 10 CFR 50.36(c)(1)(ii)(A):
> Paragraph (c)(1)(ii)(A) of 10 CFR 50.36, "Technical specifications," states, in part, that where a Limiting Safety System Setting (LSSS) is specified for a variable on which a Safety Limit (SL) has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded. The Analytical Limit (AL) is the limit on the process variable at which the instrument loop protective action occurs as assumed in the plant's safety analysis. Protective action at the AL ensures that the SL is not exceeded. The AL, however, does not account for uncertainties associated with the instrument loop. The instrument loop uncertainty is accounted for during calculation of an instrument loop's Trip Setpoint.
>
> NRC Regulatory Guide 1.105, "Setpoints For Safety-Related Instrumentation":
> This regulatory guide endorses Part 1 of ISA-S67.04-1994 standard, which describes a method acceptable to the staff for complying with NRC's regulations in ensuring that setpoints for safety-related instrumentation are initially within and remain within the technical specification limits.

The proposed amendments incorporate a change into the TS that is specific to LSCS and, therefore, do not rely upon the previous issuance of amendments to other licensees.

3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's regulatory and technical analyses in support of its proposed license amendment which are described in Sections 5.0 and 6.0 of Attachment 2 of the licensee's submittal. The detailed evaluation below will support the conclusion 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

The HPCS pump is provided with a minimum flow bypass line to protect the pump from overheating when the pump is operating and the injection valve is not open. The minimum flow valve is controlled by the flow controller at the pump discharge. The HPCS minimum flow valve is opened when low flow and high pump discharge pressure are sensed, and the valve is automatically closed when the flow rate is adequate to protect the pump or the discharge pressure is low, indicating that the pump is not operating. The minimum flow through the line is restricted by the orifice size. The current Allowable Values for the Low (Bypass) function are greater than or equal to 1380 gpm and less than or equal to 1704 gpm. The upper Allowable Value ensures that the minimum flow bypass valve automatically closes to allow maximum flow to the HPCS sparger. The proposed change only increases the upper Allowable Value from 1704 gpm to 2194 gpm.

The worst situation is the high flow condition with reactor at low pressure, i.e., 5400 gpm at 370 psig. The system flow rates are verified during the periodic surveillance test required by TS Surveillance Requirement 3.5.1.5 to demonstrate a flow of 6250 gpm at 370 psig for Unit 1 and 6200 gpm at 330 psig for Unit 2, respectively.

Previous testing of the systems has shown that if the minimum flow valve remains completely open, the flow to the Reactor Pressure Vessel (RPV) exceeds 5400 gpm at 370 psig. At 370 psig, the flow through the minimum flow line is approximately 582 gpm. The surveillance minimum acceptance criterion of 6300 gpm minus a potential 582 gpm bypass flow results in 5718 gpm flow to the RPV, which is greater than the LOCA analysis value of 5400 gpm at 370 psig.

When the pump flow into the RPV is 2194 gpm with the minimum flow valve open during the surveillance test, the pump discharge pressure is approximately 1080 psig and the corresponding pump total flow is approximately 3100 gpm with 909 gpm going through the minimum flow line. The required flow into the RPV is approximately 1300 gpm. There is an excess flow of approximately 900 gpm into the RPV compared with the required flow of 1300 gpm.

The HPCS flow through the minimum flow line is increased by about 490 gpm from the previous maximum flow of 1704 gpm to 2194 gpm. The HPCS system is tested in both configurations and the surveillance tests have verified that there is no safety impact. Since the HPCS injection flow requirement to the HPCS spray sparger assumed in the LOCA analysis is met for the two pressure conditions, 1300 gpm at 1080 psig and 5400 gpm at 370 psig, the LOCA analysis results are not adversely affected by increasing the minimum flow high value from 1704 gpm to 2194 gpm.

The licensee has proposed to change TS Table 3.3.5.1-1, Function 3.e to increase the upper limit Allowable Value from "≤ 1704 gallons per minute (gpm)" to "≤ 2194 gpm." The staff reviewed the setpoint methodology calculations for LSCS and determined that the licensee has used Method 3 included in Part II of the ISA-67.04-1994 standard, which is not endorsed by the staff, to calculate the Allowable Value for this instrumentation.

During recent reviews of proposed license amendments associated with changes to the LSSSs, the staff has identified a concern regarding Method 3. The concern relates to the manner in which uncertainties not addressed in periodic testing are accounted for in the establishment of the Allowable Values. Of particular concern are uncertainties associated with instruments excluded from channel operational testing, such as instruments located inside the containment building and tested only during outages. Failure to properly account for these uncertainties could result in Allowable Values that do not provide adequate assurance that associated SLs will not be violated. The NRC staff is currently working toward resolution of this generic concern.

The licensee's proposed change to TS Table 3.3.5.1-1, Function 3.e for LSCS is based on use of Method 3. However, the staff has concluded that the generic concern does not apply to the proposed changes because the instruments involved are process-actuated switches and so there are no instruments excluded from channel operational tests. Therefore, the staff finds that there is reasonable assurance that the proposed change will not result in violation of any SL, and that the proposed change is acceptable.

Based on the review of licensee's regulatory and technical analyses in support of the proposed license amendment, the staff concludes that the proposed TS change is in accordance with the current licensing basis and is, therefore, acceptable. The staff's conclusion does not signify that the generic concern discussed above is resolved for LSCS. The licensee may be subject to further actions in the future as this generic concern is resolved.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component 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 (68 FR 25654). 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.

6.0 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.

7.0 REFERENCES

1. Letter from K. R. Jury, Exelon Generation Company, to NRC, "Request for Amendment to Technical Specifications Table 3.3.5.1-1,"Emergency Core Cooling System Instrumentation,"" dated March 31, 2003 (ADAMS Accession No. ML030990558).

2. Letter from T. W. Simpkin, Exelon Generation Company, to NRC, "Response to Request for Additional Information to Support Request for Amendment to Technical Specifications Table 3.3.5.1-1,"Emergency Core Cooling System Instrumentation,"" dated June 26, 2003 (ADAMS Accession No. ML031820735).

Principal Contributors: G. Thomas, NRR/DSSA/SRXB-A
G. Armstrong, NRR/DE/EEIB-A

Date: March 4, 2004