

10 CFR 50.90

RS-03-029

March 31, 2003

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555Subject: LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374Request for Amendment to Technical Specifications
Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation"

In accordance with 10 CFR 50.90, Exelon Generation Company (EGC), LLC, hereby requests the following amendment to Appendix A, Technical Specifications (TS), of Facility Operating License Nos. NPF-11 and NPF-18. 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 LaSalle County Station 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.

The information supporting the proposed TS change is subdivided as follows.

- Attachment 1 is the notarized affidavit.
- Attachment 2 provides our evaluation supporting the proposed change.
- Attachment 3 contains a copy of the marked up TS page.
- Attachment 4 provides the retyped TS page.

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The proposed TS change has been reviewed by the LaSalle County Station Plant Operations Review Committee (PORC) and approved by the Nuclear Safety Review Board (NSRB) in accordance with the Quality Assurance Program.

EGC is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated State Official.

We request approval of the proposed change by March 1, 2004 with an implementation period of 60 days.

Should you have any questions concerning this submittal, please contact Mr. T. W. Simpkin at (630) 657-2821.

Sincerely,


for Keith R. Jury
Director-Licensing
Mid-West Regional Operating Group

Attachments:

- Attachment 1. Affidavit
- Attachment 2. Evaluation of Proposed Change
- Attachment 3. Markup of Proposed Technical Specification Page Change
- Attachment 4. Retyped Page for Technical Specification Change

cc: Regional Administrator – NRC Region III
NRC Project Manager – NRC NRR
NRC Senior Resident Inspector – LaSalle County Station
Office of Nuclear Facility Safety – Illinois Department of Nuclear Safety

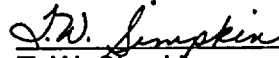
ATTACHMENT 1
Affidavit

STATE OF ILLINOIS)
COUNTY OF DUPAGE)
IN THE MATTER OF:)
EXELON GENERATION COMPANY (EGC), LLC) Docket Numbers
LASALLE COUNTY STATION - UNIT 1 and UNIT 2) 50-373 and 50-374

SUBJECT: Request for Amendment to Technical Specifications
Table 3.3.5.1-1, "Emergency Core Cooling System
Instrumentation"


AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information, and belief.



T. W. Simpkin
Manager-Licensing
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and
for the State above named, this 31st day of
March, 2003



Anese L. Grigsby
Notary Public



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Evaluation of Proposed Change
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- 1.0 INTRODUCTION
- 2.0 DESCRIPTION OF PROPOSED AMENDMENT
- 3.0 BACKGROUND
- 4.0 REGULATORY REQUIREMENTS & GUIDANCE
- 5.0 TECHNICAL ANALYSIS
- 6.0 REGULATORY ANALYSIS
- 7.0 NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
- 8.0 ENVIRONMENTAL CONSIDERATION
- 9.0 PRECEDENT

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1.0 INTRODUCTION

In accordance with 10 CFR 50.90, Exelon Generation Company (EGC), LLC, hereby requests the following amendment to Appendix A, Technical Specifications (TS), of Facility Operating License Nos. NPF-11 and NPF-18. 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 High Pressure Core Spray (HPCS) system flow switches are dual function switches. The switch trip setpoint is set based on the lower Allowable Value and functions to establish sufficient bypass flow to protect the pump from overheating. The switch reset setpoint is set based on the upper Allowable Value to ensure that the closure of the minimum flow valve is initiated to allow full flow into the core. The proposed change increases the upper Allowable Value to increase the band between the two Allowable Values and eliminate historical difficulties during calibration. This band increase accounts for as-left setting tolerances, setpoint drift and inherent instrumentation deadband in the dual function switches. The current upper Allowable Value was initially provided in the LaSalle County Station TS during conversion to Improved Technical Specifications (ITS) format. This value was based on vendor supplied data and was believed at the time to adequately account for these parameters; however, it has proven to be too restrictive. New calculations have been performed using current equipment performance history data. The revised upper Allowable Value limit has been determined using the same setpoint methodology used for the current value. The increase in the allowed bypass flow rate does not affect the HPCS system response time or the capability of the HPCS system to perform its intended safety function.

2.0 DESCRIPTION OF PROPOSED AMENDMENT

The proposed change increases the upper limit associated with TS Table 3.3.5.1-1, Function 3.e Allowable Value from \leq 1704 gpm to \leq 2194 gpm.

3.0 BACKGROUND

The HPCS pump is provided with a minimum flow bypass line to protect the pump from overheating when the pump is operating and the associated reactor pressure vessel (RPV) injection valve is not sufficiently open. The HPCS minimum flow line 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 the HPCS pump is not operating. The HPCS System Flow Rate—Low (Bypass) Function is capable of closing the HPCS minimum flow valve to ensure the closure of the minimum flow valve is initiated to allow full flow into the core.

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One flow switch is used to detect the HPCS system flow rate. The logic is arranged such that the switch causes the minimum flow valve to open, provided the HPCS pump discharge pressure sensed by another switch is high enough, indicating the pump is operating. The logic will close the minimum flow valve once the closure setpoint is exceeded.

The HPCS System Flow Rate—Low (Bypass) Allowable Values are high enough to ensure that pump flow rate is sufficient to protect the pump, yet low enough to ensure that the closure of the minimum flow valve is initiated to allow full flow into the core.

4.0 REGULATORY REQUIREMENTS & GUIDANCE

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.

5.0 TECHNICAL ANALYSIS

5.1 Design Bases

The HPCS System for each LaSalle County Station unit consists of a single motor driven pump, a spray sparger above the reactor core, and piping and valves to transfer water from the suppression pool to the sparger. Upon receipt of an initiation signal, and with AC power available, the HPCS pump automatically starts and valves in the flow path begin to open. The HPCS pumps are provided with minimum flow bypass lines that discharge to the suppression pool. The minimum flow bypass valves automatically open to prevent pump damage due to overheating when flow through the HPCS pump is low, such as when discharge line valves are not fully open.

The HPCS System Flow Rate—Low (Bypass) Function is one of the inputs to the logic that controls the opening and closing of the minimum flow bypass valve. The current Allowable Values for this function are greater than or equal to (\geq)1380 gpm and \leq 1704 gpm. The lower Allowable Value limit (i.e., 1380 gpm) ensures that the minimum flow bypass valve opens when pump flow is too low for adequate cooling of the pump while the pump is operating. This limit is not affected by the proposed change.

The upper Allowable Value limit (i.e., 1704 gpm) ensures that the minimum flow bypass valve automatically closes to allow maximum flow to the RPV spray sparger. The proposed change increases the value to \leq 2194 gpm. LaSalle County Station has evaluated the effect of this change and concluded the following.

- The proposed change to increase the upper Allowable Value limit from

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≤ 1704 gpm to ≤ 2194 gpm will provide further assurance that the minimum flow bypass valve remains full open until the HPCS pump flow to the RPV spray sparger is sufficient to prevent overheating of the pump, and

- The upper Allowable Value ensures that the HPCS minimum flow bypass valve closes to allow maximum flow to the RPV spray sparger. The proposed change will delay the initiation of valve closure from ≤ 1704 gpm to ≤ 2194 gpm. Calculations have been performed which evaluated the performance of the HPCS system without the closure of the minimum flow bypass valve. The calculations determined that the Unit 1 and Unit 2 HPCS pump capacity with the minimum flow bypass valve open will support HPCS System injection flow into the RPV over the full range of RPV pressures above the requirements for HPCS in the Loss of Coolant Accident (LOCA) analyses up to the maximum assumed injection flow of 5400 gpm. The margin to the flow requirements of the LOCA analysis varies from approximately 200 gpm at very low RPV pressures to greater than 1000 gpm at higher RPV pressures. Since HPCS injection flow requirement to the RPV spray sparger assumed in the LOCA analysis is met with the minimum flow bypass valve open, the LOCA analysis results are not adversely affected by increasing the value of flow when the minimum flow bypass valve starts to close. Although the calculations show that closure of the HPCS minimum flow bypass valve is not necessary to meet the HPCS System injection flow requirements assumed in the LOCA analyses, LaSalle County Station has chosen to retain the upper Allowable Value in the TS to provide additional margin to the assumed injection flow of the analyses.

Therefore, increasing the TS upper Allowable Value limit for the HPCS System Flow Rate—Low (Bypass) Function from ≤ 1704 gpm to ≤ 2194 gpm will not affect the capability of the HPCS system in performing its intended safety function.

5.2 Risk Information

This submittal is not based on risk-informed decision making.

6.0 REGULATORY ANALYSIS

The LaSalle County Station Emergency Core Cooling Systems (ECCS) are designed, in conjunction with the primary and secondary containments, to limit the release of radioactive material to the environment following a loss of coolant accident (LOCA). The ECCS uses two independent methods, flooding and spraying, to cool the reactor core following a LOCA. The HPCS is one of the core spray systems. HPCS is a system that is part of the primary success path and which functions to mitigate a design basis accident that assumes the failure of the integrity of a fission product barrier. Therefore,

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HPCS and its associated equipment, must be included in LaSalle County Station TS in accordance with 10 CFR 50.36(c)(2)(ii)(c).

7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

EGC has evaluated the proposed change to the TS for LaSalle County Station, Unit 1 and Unit 2, and has determined that the proposed change does not involve a significant hazards consideration and is providing the following information to support a finding of no significant hazards consideration.

Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change to LaSalle County Station Technical Specifications (TS) Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.e, "HPCS System Flow Rate – Low (Bypass)," request an increase in the Allowable Value from less than or equal to (\leq) 1704 gallons per minute (gpm) to \leq 2194 gpm. The operation of High Pressure Core Spray (HPCS) System Flow Rate – Low (Bypass) function is not a precursor to any accident previously evaluated. Thus, the proposed change does not have any effect on the probability of an accident previously evaluated.

The LaSalle County Station Emergency Core Cooling Systems (ECCS) are designed, in conjunction with the primary and secondary containments, to limit the release of radioactive material to the environment following a loss of coolant accident (LOCA). The ECCS uses two independent methods, flooding and spraying, to cool the reactor core following a LOCA. The HPCS is one of the core spray systems. The evaluation of the proposed change concluded that the HPCS will operate as assumed in accidents previously evaluated. Thus, the radiological consequences of any accident previously evaluated are not increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not affect the control parameters governing unit operation and does not introduce any new equipment, modes of system operation or failure mechanisms. Calculations have been performed which

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evaluated the performance of the HPCS system without the closure of the minimum flow bypass valve. The calculations determined that the Unit 1 and Unit 2 HPCS pump capacity with the minimum flow bypass valve open will support HPCS System injection flow into the reactor pressure vessel (RPV) over the full range of RPV pressures above the requirements for HPCS in the Loss of Coolant Accident (LOCA) analyses.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

Does the change involve a significant reduction in a margin of safety?

Response: No

The HPCS System Flow Rate—Low (Bypass) Function is one of the inputs to the logic that controls the opening and closing of the minimum flow bypass valve. The current Allowable Values for this function are greater than or equal to (\geq)1380 gpm and \leq 1704 gpm. The lower Allowable Value limit (i.e., 1380 gpm) ensures that the minimum flow bypass valve opens when pump flow is too low for adequate cooling of the pump while the pump is operating. This limit is not affected by the proposed change.

The upper Allowable Value limit (i.e., 1704 gpm) ensures that the minimum flow bypass valve automatically closes to allow maximum flow to the RPV spray sparger. The proposed change increases the value to \leq 2194 gpm. LaSalle County Station has evaluated the effect of this change and concluded the following.

- The proposed change to increase the upper Allowable Value limit from \leq 1704 gpm to \leq 2194 gpm will provide further assurance that that the minimum flow bypass valve remains full open until the HPCS pump flow to the RPV spray sparger is sufficient to prevent overheating of the pump, and
- The upper Allowable Value ensures that the HPCS minimum flow bypass valve closes to allow maximum flow to the RPV spray sparger. The proposed change will delay the initiation of valve closure from \leq 1704 gpm to \leq 2194 gpm. The calculations determined that the Unit 1 and Unit 2 HPCS pump capacity with the minimum flow bypass valve open will support HPCS System injection flow into the RPV over the full range of RPV pressures above the requirements for HPCS in the Loss of Coolant Accident (LOCA) analysis up to the maximum assumed injection flow of 5400 gpm. The margin to the flow requirements of the LOCA analysis varies from approximately 200 gpm at very low RPV pressures to greater than 1000 gpm at higher RPV pressures. Since the HPCS injection flow requirement to the RPV spray sparger assumed in the LOCA analysis is met with the minimum flow bypass valve open, the LOCA analysis results are not adversely affected by increasing the value of flow when the minimum flow bypass valve starts to close. Although

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the calculations show that closure of the HPCS minimum flow bypass valve is not necessary to meet the HPCS System injection flow requirements assumed in the LOCA analyses, LaSalle County Station has chosen to retain the upper Allowable Value in the TS to provide additional margin to the assumed injection flow of the analyses.

Thus, increasing the TS upper Allowable Value limit for the HPCS System Flow Rate—Low (Bypass) Function from ≤ 1704 gpm to ≤ 2194 gpm will not affect the capability of the HPCS system in performing its intended safety function.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the above, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

8.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

9.0 PRECEDENT

The proposed amendment incorporates into the LaSalle County Station a change that is specific to LaSalle County Station, and therefore, this proposed amendment does not rely upon the issuance of amendments to other licensees.

ATTACHMENT 3

MARKUP OF PROPOSED TECHNICAL SPECIFICATION PAGE CHANGE

Revised TS Page

Table 3.3.5.1-1 (page 3 of 4)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level—Low Low, Level 2	1,2,3, 4 ^(a) ,5 ^(a)	4 ^(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -83 inches
b. Drywell Pressure—High	1,2,3	4 ^(b)	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.77 psig
c. Reactor Vessel Water Level—High, Level 8	1,2,3, 4 ^(a) ,5 ^(a)	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 66.5 inches
d. HPCS Pump Discharge Pressure—High (Bypass)	1,2,3, 4 ^(a) ,5 ^(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 113.2 psig
e. HPCS System Flow Rate—Low (Bypass)	1,2,3, 4 ^(a) ,5 ^(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 1380 gpm and ≤ 1704 gpm
f. Manual Initiation	1,2,3, 4 ^(a) ,5 ^(a)	1	C	SR 3.3.5.1.5	NA ≤ 2194
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level—Low Low Low, Level 1	1,2 ^(c) ,3 ^(c)	2	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -147.0 inches
b. Drywell Pressure—High	1,2 ^(c) ,3 ^(c)	2	E	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.77 psig
c. ADS Initiation Timer	1,2 ^(c) ,3 ^(c)	1	F	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 118 seconds

(continued)

- (a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.
- (b) Also required to initiate the associated DG.
- (c) With reactor steam dome pressure > 150 psig.

ATTACHMENT 4

**RETYPE PAGE
FOR
TECHNICAL SPECIFICATION CHANGE**

Retyped TS Page

Table 3.3.5.1-1 (page 3 of 4)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level—Low Low, Level 2	1,2,3, 4 ^(a) ,5 ^(a)	4 ^(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -83 inches
b. Drywell Pressure—High	1,2,3	4 ^(b)	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.77 psig
c. Reactor Vessel Water Level—High, Level 8	1,2,3, 4 ^(a) ,5 ^(a)	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 66.5 inches
d. HPCS Pump Discharge Pressure—High (Bypass)	1,2,3, 4 ^(a) ,5 ^(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 113.2 psig
e. HPCS System Flow Rate—Low (Bypass)	1,2,3, 4 ^(a) ,5 ^(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 1380 gpm and ≤ 2194 gpm
f. Manual Initiation	1,2,3, 4 ^(a) ,5 ^(a)	1	C	SR 3.3.5.1.5	NA
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level—Low Low Low, Level 1	1,2 ^(c) ,3 ^(c)	2	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -147.0 inches
b. Drywell Pressure—High	1,2 ^(c) ,3 ^(c)	2	E	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.77 psig
c. ADS Initiation Timer	1,2 ^(c) ,3 ^(c)	1	F	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 118 seconds

(continued)

- (a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.
- (b) Also required to initiate the associated DG.
- (c) With reactor steam dome pressure > 150 psig.