

10 CFR 50.90

RS-03-079

May 19, 2003

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373 and 50-374Subject: Request for Amendment to Technical Specifications  
Surveillance Requirement 3.7.7.1 for Turbine Bypass Valve Testing

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 decrease the frequency associated with Surveillance Requirement (SR) 3.7.7.1 for Turbine Bypass Valve (BPVs) testing, from 7 to 31 days. The proposed change is consistent with the testing frequency contained in NUREG -1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 2, dated June 2001, for BPV testing.

The 7-day frequency associated with SR 3.7.7.1 was established in the LaSalle County Station (LSCS) TS during conversion to Improved Technical Specifications (ITS) format due to the testing frequency contained in the LSCS custom TS and the difficulties experienced with other Electro-Hydraulic Control (EHC) system valves to consistently pass their surveillance tests. LSCS has recently re-evaluated the performance of these valves and has determined that the current performance of these valves supports decreasing the testing frequency of the BPVs from 7 to 31 days.

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 and Bases page for information only.

A001

May 19, 2003  
U. S. Nuclear Regulatory Commission  
Page 2

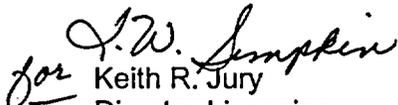
The proposed TS change has been reviewed by the LaSalle County Station Plant Operations Review Committee (PORC) and approved by the Nuclear Safety Review Board (NSRB) in accordance with the Quality Assurance Program.

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 June 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 Pages for Technical Specification Change and Bases Change (for information only)

cc: Regional Administrator – NRC Region III  
NRC Project Manager – 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  
Surveillance Requirement 3.7.7.1 for Turbine Bypass Valve  
Testing

AFFIDAVIT

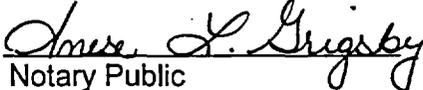
I affirm that the content of this transmittal is true and correct to the best of my knowledge, information, and belief.

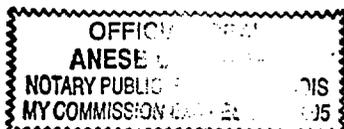
  
T. W. Simpkin  
Manager-Licensing  
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and

for the State above named, this 19<sup>th</sup> day of

May, 2003

  
Notary Public



**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 1 of 6**

- 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

**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 2 of 6**

**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 decrease the frequency associated with Surveillance Requirement (SR) 3.7.7.1 for Turbine Bypass Valve (BPVs) testing from 7 to 31 days. The proposed change is consistent with the testing frequency contained in NUREG -1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 2, dated June 2001, for BPV testing.

The 7-day frequency associated with SR 3.7.7.1 was established in the LaSalle County Station (LSCS) TS during conversion to Improved Technical Specifications (ITS) format due to the testing frequency contained in the LSCS custom TS and the difficulties experienced with other Electro-Hydraulic Control (EHC) system valves to consistently pass their surveillance tests. LSCS has recently re-evaluated the performance of these valves and has determined that the current performance of these valves supports decreasing the testing frequency of the BPVs from 7 to 31 days.

**2.0 DESCRIPTION OF PROPOSED AMENDMENT**

The proposed change decreases the frequency associated with SR 3.7.7.1 for BPVs testing from 7 to 31 days.

**3.0 BACKGROUND**

The Main Turbine Bypass System is designed to control steam pressure when reactor steam generation exceeds turbine requirements during unit startup, sudden load reduction, and cooldown. It allows excess steam flow from the reactor to the condenser without going through the turbine. The bypass capacity of the system is approximately 25% of the Nuclear Steam Supply System rated steam flow. Sudden load reductions within the capacity of the steam bypass can be accommodated without reactor scram. The Main Turbine Bypass System consists of five valves mounted on a valve manifold connected to the main steam lines between the main steam isolation valves and the main turbine stop valves. Each of these BPVs is sequentially operated by hydraulic cylinders. The BPVs are controlled by the pressure regulation function of the Turbine EHC System, as discussed in the Updated Final Safety Analysis Report (UFSAR), Section 7.7.5.2. The BPVs are normally closed, and the pressure regulator controls the turbine control valves, directing all steam flow to the turbine. If the speed governor or the load limiter restricts steam flow to the turbine, the pressure regulator controls the system pressure by opening the BPVs. When the BPVs open, the steam flows from the BPV outlet manifold, through connecting piping, to the pressure breakdown assemblies, where a series of orifices are used to further reduce the steam pressure before the steam enters the condenser.

The 7-day frequency associated with SR 3.7.7.1 was established in the LSCS TS during

**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 3 of 6**

conversion to ITS format due to the testing frequency contained in the LSCS custom TS and the previous performance of other EHC system valves to consistently pass their surveillance tests.

EHC fluid at LSCS has consistently met or exceeded vendor and industry recommendations for fluid cleanliness. Even though the fluid samples continuously indicated the fluid exceeded these requirements for cleanliness, LSCS experienced approximately 30 solenoid failures during Turbine Control Valve (CV), Stop Valve (SV), and Combined Intermediate Valve (CIV) testing between 1999 and 2001. These failures were primarily due to solenoid valve sticking caused by degraded EHC fluid in the hydraulic lines to the solenoids. TS and vendor testing requires the SVs and CVs to be cycled on a quarterly frequency. Due to the failures, SVs were tested on a weekly frequency and CVs were tested monthly. Even with increased frequency testing, failures occurred on CVs and SVs. CIVs are tested whenever unit load is reduced below 50% and solenoid failures also occurred in these valves between 1999 and 2001. BPVs are tested weekly based on TS requirements and no BPV testing failures were experienced during the 1999 to 2001 timeframe. This may have been due to the fact that the BPVs use a different, more robust solenoid valve than those on other EHC system valves. However, even though no BPV failures occurred during testing, LSCS was not in favor of extending the TS required testing frequency of the bypass valves from 7 to 31 days at the time of the ITS conversion because of the poor hydraulic system performance exhibited by the SV, CV, and CIV failures.

Since the conversion to ITS, LSCS performed a root cause investigation into the EHC system valve testing failures. The root cause identified heat degradation of the EHC fluid as the cause of the fluid degradation and poor turbine valve solenoid performance. As a result of this root cause evaluation, corrective actions were taken on both Unit 1 and Unit 2 in early 2002. These corrective actions included; a chemical flush of the EHC system hydraulic piping and components, insulation of all identified heat sources near EHC system piping and components, replacement of the standard EHC fluid, which was a natural synthetic fluid blend, with an all synthetic EHC fluid that is less susceptible to heat degradation, and replacement of all solenoids with new solenoids. Additionally, in mid-2002 an electrostatic fluid purification system was placed into service on both units to remove heat degradation products from EHC fluid. The corrective actions taken have resulted in significant improvements in hydraulic system performance. Beginning in January 2002, the testing frequency of SVs and CVs was extended to quarterly consistent with the TS and vendor requirements. CIVs continued to be tested whenever unit load was reduced below 50%, with the time between these tests being as long as 6 months. Since the system upgrades were made, there have been no failures of solenoids on CVs, SVs, or CIVs. In addition, there continues to be no BPV test failures.

#### 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.

**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 4 of 6**

**5.0 TECHNICAL ANALYSIS**

**5.1 Design Bases**

Cycling each BPV through one complete cycle of full travel demonstrates that the valves are mechanically OPERABLE and will function when required. The 7-day frequency associated with SR 3.7.7.1 was conservatively established in the LSCS TS during conversion to ITS format due to the previous performance of other EHC system valves to consistently pass their surveillance tests during the 1999 to 2001 timeframe. There were no BPV testing failures experienced during the 1999 to 2001 timeframe and there continues to be no BPV test failures. Based on current EHC hydraulic system performance and the testing frequency contained in NUREG -1434, LSCS believes decreasing the test frequency for BPVs from 7 to 31 days is justified.

**5.2 Risk Information**

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

**6.0 REGULATORY ANALYSIS**

The Main Turbine Bypass System is required to be operable to limit peak pressure in the main steam lines and maintain reactor pressure within acceptable limits during events that cause rapid pressurization, such that the Safety Limit Minimum Critical Power Ratio (MCPR) is not exceeded. An operable Main Turbine Bypass System requires the BPVs to open in response to increasing main steam line pressure. Therefore, BPV testing must be included in LSCS 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 LSCS, 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 will decrease the frequency associated with Surveillance Requirement (SR) 3.7.7.1 for turbine bypass valve (BPV) testing from 7 to 31 days. The proposed change is consistent with the testing frequency contained in NUREG -1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 2, dated June 2001, for BPV testing. The performance of BPV surveillance testing is not a precursor to any accident previously evaluated.

**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 5 of 6**

Thus, the proposed change does not have any effect on the probability of an accident previously evaluated.

The Main Turbine Bypass System is required to be operable to limit peak pressure in the main steam lines and maintain reactor pressure within acceptable limits during events that cause rapid pressurization, such that the Safety Limit Minimum Critical Power Ratio (MCPR) is not exceeded. An operable Main Turbine Bypass System requires the BPVs to open in response to increasing main steam line pressure. The performance of BPVs surveillance testing provides assurance that the valves 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. 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 proposed change will decrease the frequency associated with SR 3.7.7.1 for BPV testing from 7 to 31 days. The proposed change is consistent with the BPV testing frequency contained in NUREG -1433, Revision 2, and does not effect the design parameters or the setpoints associated with BPV operation. 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.

**ATTACHMENT 2**  
**Evaluation of Proposed Change**  
**Page 6 of 6**

**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 LCSC TS a change to SR 3.7.7.1 that is consistent with the wording and intent of NUREG-1434, Rev. 2.

**ATTACHMENT 3**

**MARKUP OF PROPOSED TECHNICAL SPECIFICATION PAGE CHANGE**

Revised TS Page

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.2; "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR, are made applicable.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify one complete cycle of each main turbine bypass valve.	7 days (31)

(continued)

**ATTACHMENT 4**

**RETYPE PAGE  
FOR  
TECHNICAL SPECIFICATION CHANGE**

Retyped TS Page

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR, are made applicable.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify one complete cycle of each main turbine bypass valve.	31 days

(continued)

BASES

---

ACTIONS  
(continued)

B.1

If the Main Turbine Bypass System cannot be restored to OPERABLE status and the MCPR limits for an inoperable Main Turbine Bypass System are not applied, THERMAL POWER must be reduced to < 25% RTP. As discussed in the Applicability section, operation at < 25% RTP results in sufficient margin to the required limits, and the Main Turbine Bypass System is not required to protect fuel integrity during the turbine trip, turbine generator load rejection, and feedwater controller failure maximum demand transients. The 4 hour Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

---

SURVEILLANCE  
REQUIREMENTS

SR 3.7.7.1

Cycling each main turbine bypass valve through one complete cycle of full travel demonstrates that the valves are mechanically OPERABLE and will function when required. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions. Operating experience has shown that these components usually pass the SR when performed at the 31 day frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

SR 3.7.7.2

The Main Turbine Bypass System is required to actuate automatically to perform its design function. This SR demonstrates that, with the required simulated system initiation signals, the valves will actuate to their required position. The 24 month Frequency is based on the need to perform this Surveillance under conditions that apply during a unit outage and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

---