

October 10, 2003

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: ISSUANCE OF AMENDMENTS - DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2, EXCESS FLOW CHECK VALVES (TAC NOS. MB7732, MB7733, MB7734, AND MB7735)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 203 to Facility Operating License No. DPR-19 and Amendment No. 195 to Facility Operating License No. DPR-25 for Dresden, Units 2 and 3, and Amendment No. 218 to Facility Operating License No. DPR-29 and Amendment No. 212 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments are in response to your application dated February 14, 2003, as supplemented by letter dated August 8, 2003.

The amendments revise the Technical Specifications to relax the 24-month surveillance frequency of instrumentation line excess flow check valves (EFCVs) to require that a representative sample be tested every 24 months such that each EFCV will be tested at least once every 10 years.

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/

Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos.: 50-237, 50-249, 50-254, 50-265

Enclosures: 1. Amendment No. 203 to DPR-19
2. Amendment No. 195 to DPR-25
3. Amendment No. 218 to DPR-29
4. Amendment No. 212 to DPR-30
5. Safety Evaluation

cc w/encls: See next page

October 10, 2003

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: ISSUANCE OF AMENDMENTS - DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2, EXCESS FLOW CHECK VALVES (TAC NOS. MB7732, MB7733, MB7734, AND MB7735)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 203 to Facility Operating License No. DPR-19 and Amendment No. 195 to Facility Operating License No. DPR-25 for Dresden, Units 2 and 3, and Amendment No. 218 to Facility Operating License No. DPR-29 and Amendment No. 212 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments are in response to your application dated February 14, 2003, as supplemented by letter dated August 8, 2003.

The amendments revise the Technical Specifications to relax the 24-month surveillance frequency of instrumentation line excess flow check valves (EFCVs) to require that a representative sample be tested every 24 months such that each EFCV will be tested at least once every 10 years.

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/

Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos.: 50-237, 50-249, 50-254, 50-265

- Enclosures: 1. Amendment No. 203 to DPR-19
- 2. Amendment No. 195 to DPR-25
- 3. Amendment No. 218 to DPR-29
- 4. Amendment No. 212 to DPR-30
- 5. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	PDIII-2 R/F	WRuland	AMendiola
LRossbach	MBanerjee	PCoates	OGC
ACRS	GHill (4)	MRing, RIII	

*SE input dated 9/3/3

ADAMS Accession Number: **ML032740364**

**see previous concurrence

OFFICE	PM:LPD3-2	LA:LPD3-2	PM:LPD3-2	SC:IROB-A	SC:SPSB-A	OGC	TL:LPD3-2	SC:LPDIII-2
NAME	MBanerjee	PCoates	LRossbach	TBoyce**	SDinsmore	AHodgdon**	DPickett	AMendiola
DATE	10/09/03	10/01/03	10/09/03	10/03/03	09/03/03	10/06/03	10/09/03	10/10/03

OFFICIAL RECORD COPY

Dresden Nuclear Power Units 2 and 3

cc:

Site Vice President - Dresden Nuclear Power Station
Exelon Generation Company, LLC
6500 N. Dresden Road
Morris, IL 60450-9765

Senior Vice President, Nuclear Services
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Dresden Nuclear Power Station Plant Manager
Exelon Generation Company, LLC
6500 N. Dresden Road
Morris, IL 60450-9765

Vice President - Operations Support
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Regulatory Assurance Manager - Dresden
Exelon Generation Company, LLC
6500 N. Dresden Road
Morris, IL 60450-9765

Chief Operating Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

U.S. Nuclear Regulatory Commission
Dresden Resident Inspectors Office
6500 N. Dresden Road
Morris, IL 60450-9766

Vice President - Licensing and Regulatory
Affairs
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Chairman
Grundy County Board
Administration Building
1320 Union Street
Morris, IL 60450

Director - Licensing
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Senior Counsel, Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Illinois Emergency Management
Agency
Division of Disaster Assistance &
Preparedness
110 East Adams Street
Springfield, IL 62701-1109

Manager Licensing - Dresden and
Quad Cities
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Document Control Desk - Licensing
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Quad Cities Nuclear Power Station Units 1 and 2

cc:

Site Vice President - Quad Cities Nuclear Power Station
Exelon Generation Company, LLC
22710 206th Avenue N.
Cordova, IL 61242-9740

Quad Cities Nuclear Power Station Plant Manager
Exelon Generation Company, LLC
22710 206th Avenue N.
Cordova, IL 61242-9740

Regulatory Assurance Manager - Quad Cities
Exelon Generation Company, LLC
22710 206th Avenue N.
Cordova, IL 61242-9740

Quad Cities Resident Inspectors Office
U.S. Nuclear Regulatory Commission
22712 206th Avenue N.
Cordova, IL 61242

David C. Tubbs
MidAmerican Energy Company
One River Center Place
106 E. Second, P.O. Box 4350
Davenport, IA 52808-4350

Vice President - Law and Regulatory Affairs
MidAmerican Energy Company
One River Center Place
106 E. Second Street
P.O. Box 4350
Davenport, IA 52808

Chairman
Rock Island County Board of Supervisors
1504 3rd Avenue
Rock Island County Office Bldg.
Rock Island, IL 61201

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Illinois Emergency Management Agency
Division of Disaster Assistance & Preparedness
110 East Adams Street
Springfield, IL 62701-1109

Document Control Desk - Licensing
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Senior Vice President - Nuclear Services
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Vice President - Operations Support
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Chief Operating Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Vice President - Licensing and Regulatory Affairs
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Director Licensing
Mid-West Regional Operating Group
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Senior Counsel, Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Quad Cities Units 1 & 2

- 2 -

cc:

Manager Licensing - Dresden and Quad
Cities
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 203
License No. DPR-19

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Exelon Generation Company, LLC (the licensee) dated February 14, 2003, as supplemented by letter dated August 8, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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;
 - 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 Facility Operating License No. DPR-19 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 203, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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: October 10, 2003

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 195
License No. DPR-25

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Exelon Generation Company, LLC (the licensee) dated February 14, 2003, as supplemented by letter dated August 8, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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;
 - 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 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 195, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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: October 10, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 203 AND 195

FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the attached page. The revised page is identified by amendment number and contains a line in the margin indicating the area of change.

Remove

3.6.1.3-8

Insert

3.6.1.3-8

EXELON GENERATION COMPANY, LLC

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 218
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated February 14, 2003, as supplemented by letter dated August 8, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and 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 rules and 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;
 - 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 3.B. of Facility Operating License No. DPR-29 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 218 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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: October 10, 2003

EXELON GENERATION COMPANY, LLC

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 212
License No. DPR-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated February 14, 2003, as supplemented by letter dated August 8, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and 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 rules and 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;
 - 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 3.B. of Facility Operating License No. DPR-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 212, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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: October 10, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 218 AND 212

FACILITY OPERATING LICENSE NOS. DPR-29 AND DPR-30

DOCKET NOS. 50-254 AND 50-265

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the attached page. The revised page is identified by amendment number and contains a line in the margin indicating the area of change.

Remove

3.6.1.3-7

Insert

3.6.1.3-7

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 203 TO FACILITY OPERATING LICENSE NO. DPR-19,
AMENDMENT NO. 195 TO FACILITY OPERATING LICENSE NO. DPR-25,
AMENDMENT NO. 218 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 212 TO FACILITY OPERATING LICENSE NO. DPR-30
EXELON GENERATION COMPANY, LLC
AND
MIDAMERICAN ENERGY COMPANY
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
DOCKET NOS. 50-237, 50-249, 50-254 AND 50-265

1.0 INTRODUCTION

By letter dated February 14, 2003, as supplemented by letter dated August 8, 2003, Exelon Generating Company, LLC (the licensee), proposed license amendments to change the Technical Specifications (TS) for both Dresden Nuclear Power Station (DNPS), Units 2 and 3 and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The supplement provided additional information that clarified the application, but 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.

The proposed amendment revises TS section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," surveillance requirement (SR) 3.6.1.3.8 to require that a "representative sample" of reactor instrumentation line excess flow check valves (EFCVs) be tested every 24 months, such that each EFCV will be tested nominally at least once every 10 years. Currently, TS SR 3.6.1.3.8 requires testing of each reactor instrumentation line EFCV on a 24-month frequency.

The licensee stated that the proposed change is being requested to minimize personnel radiation exposure during refueling outages and to increase the availability of instrumentation during outages.

2.0 REGULATORY EVALUATION

EFCVs are installed in boiling water reactor (BWR) instrument lines penetrating the primary containment boundary to limit the release of fluid in the event of an instrument line break. Regulatory Guide (RG) 1.11, "Instrument Lines Penetrating Primary Reactor Containment," provides guidance on the implementation of General Design Criteria (GDC) 55 and 56 for instrumentation lines that penetrate primary reactor containment and are part of the reactor coolant pressure boundary. As stated in RG 1.11, EFCVs in combination with flow restricting features (line size or orifice) satisfy the requirements of GDC 55 and 56 for automatic isolation capability, maintain the reliability of the connected instrumentation, and ensure the functional performance of secondary containment in the event of an instrumentation line rupture. Examples of EFCV installations include reactor pressure vessel level and pressure instrumentation, main steam line flow instrumentation, recirculation pump suction pressure, and reactor core isolation cooling steam line flow instrumentation. EFCVs are not required to close in response to a containment isolation signal and are not required to operate under post loss-of-coolant accident conditions.

Both DNPS and QCNPS currently require the performance of surveillance tests on each reactor instrumentation line EFCV every 24 months. TS SR 3.6.1.3.8 requires verification of the actuation capability of each reactor instrumentation line EFCV and demonstrates that each reactor instrumentation line EFCV is operable by verifying that the valve actuates to the isolation position on an actual or simulated instrument line break signal. The proposed change would revise TS SR 3.6.1.3.8 to relax the 24-month EFCV surveillance frequency by limiting the number of tests to a "representative sample" every 24 months such that each EFCV will be tested at least once every 10 years. The "representative sample" consists of an approximately equal number of EFCVs being tested every 24 months such that each EFCV is tested at least once every 10 years.

The basis for the request is the high degree of reliability shown by the EFCVs and the low consequences of an EFCV failure, as presented in General Electric Nuclear Energy (GENE) Topical Report B21-00658-01, "Excess Flow Check Valve Testing Relaxation," dated November 1998. The staff safety evaluation report (SER) dated March 14, 2000, approved this topical report. The supporting analysis for the licensee's conclusion is based on Topical Report NEDO-32977-A, "Excess Flow Check Valve Testing Relaxation," dated June 2000 which incorporated the staff's March 14, 2000, SER. Topical Report NEDO-32977-A provided: (1) an estimate of steam release frequency into the reactor building due to a break in an instrument line concurrent with an EFCV failure to close, and (2) an assessment of the radiological consequences of such a release. The Boiling Water Reactor Owners' Group (BWROG) concluded that EFCV testing intervals could be extended up to 10 years based on the topical report reliability and consequence analysis without significantly affecting plant risk. The BWROG suggested a staggered test interval based on actual valve performance with each valve being tested at least once every 10 years. The staff accepted the generic applicability of the topical report and agreed that the EFCV test interval could be extended to as much as 10 years. The staff also noted that licensees adopting the topical report must have a failure feedback mechanism and corrective action program to ensure that EFCV performance continues to be bounded by the topical report results. Additionally, each licensee is required to perform a plant-specific radiological dose assessment, and EFCV failure rate and release frequency analysis, to confirm that its facility is bounded by the generic analysis of the topical report.

The proposed change adopts the staff's approved Technical Specification Task Force (TSTF) Traveler TSTF-334, Revision 2, "Relaxed Surveillance Frequency for Excess Flow Check Valves Testing." TSTF-334 was approved by the staff on October 31, 2000, by letter from W. D. Beckner to A. R. Pietrangelo, Nuclear Energy Institute. It proposed specific changes to the Standard Technical Specifications (STS) and provides guidance for licensees implementing the extended EFCV surveillance test intervals proposed in the topical report. TSTF-334 is applicable only for those plants for which NEDO-32977-A is applicable and is subject to EFCV performance and corrective action criteria to be developed by the licensee.

3.0 TECHNICAL EVALUATION

The staff reviewed the licensee's submittal for conformance to the March 14, 2000, staff SER for Topical Report NEDO-32977-A and the guidance of approved TSTF-334, Revision 2. The staff's evaluation concerned itself with the following areas: (1) EFCV failure rate and release frequency, (2) the licensee's failure feedback mechanism and corrective action program, (3) radiological dose assessment, and (4) conformance of the revised TS to generic TS guidance.

3.1 EFCV Failure rate and release frequency

In the topical report, EFCV reliability was evaluated based on testing experience provided by 12 different BWR plants which included DNPS. The composite data indicated that EFCVs are very reliable. The data represented 12,424.5 valve years of operation with a total of 11 failures noted. The EFCV composite failure rate was $1.67E-07$ /hour and was referenced as the "upper limit" failure rate in the topical report.

The staff noted in its review of the report that the BWROG assumed the EFCV failure rate was constant over time and did not account for potential age-related degradation in the EFCV failure rate. Additionally, the staff questioned the use of an instrument line break frequency based on WASH-1400 and not on more current data. To address this concern, the BWROG Request for Additional Information (RAI) response included an updated instrument line failure frequency of $3.52E-05$ failures/year based on the Electric Power Research Institute's Technical Report No. 100380, "Pipe Failures in U.S. Commercial Nuclear Power Plants," dated July 1992. This value is 6.6 times greater than the value calculated in the topical report using WASH-1400 data. The BWROG RAI response also assumed the observed EFCV failures were five times the actual observed number (55 vs. 11) listed in the topical report. The additional impact of an increase in instrument line failure frequency and a fivefold increase in EFCV failures assumed by the BWROG RAI response demonstrated that release frequencies remained low, with limited impact on release frequency.

To estimate the release frequency initiated by an instrument line break, two factors are considered: (1) the instrument line break frequency downstream of the EFCV, and (2) the probability of the EFCV failing to close. The DNPS EFCV data was found to be consistent in both the time sampled and EFCV reliability when compared to the topical report data. The staff found the DNPS plant-specific EFCV failure frequency and release frequency to be comparable to industry data and to be consistent with the staff topical report SER. The increase in release frequency for DNPS was found to be less than $7.3E-5$ /year. The staff concluded in its SER for topical report NEDO-32977-A that an increase in release frequency of $7.3E-5$ was not significant. In addition, no additional failures of EFCVs have been noted since test data was

collected to support topical report NEDO-32977-A. Based on the above, the staff considers the estimated increase in release frequency for DNPS to be insignificant.

EFCV testing data for QCNPS was not referenced in topical report NEDO-32977-A. The licensee provided QCNPS EFCV test results that indicated a total of four EFCV failures in approximately $6.0E+6$ valve operating hours. The QCNPS EFCV data was found to be consistent in the time sampled but with a higher number of EFCV failures when compared to the individual plant topical report data. The higher number of EFCV failures resulted in a QCNPS plant-specific EFCV failure frequency that was higher than the industry composite failure rate with an associated increase in release frequency that was higher than the $7.3E-5$ /year value given in the staff topical report SER. However, the licensee stated that two of the EFCV failures occurred during the first surveillance test performed (with respect to the operating data collection interval) and used a different test methodology. Since then, the test methodology and acceptance criteria have been revised to be more consistent with the test specified in TS SR 3.6.1.3.8. The licensee stated that had the revised test methods and acceptance criteria been used the EFCV failure rates would have been reduced and the EFCV failure rates for QCNPS would be comparable to the industry composite failure rates referenced in the topical report. Based on the above, and in conjunction with the licensee's EFCV failure feedback and corrective action program described below, the staff does not consider the estimated increase in release frequency for QCNPS to be significant.

3.2 Licensee's Failure Feedback Mechanism and Corrective Action Program

The staff noted that the topical report does not provide a specific failure feedback mechanism, but does state that a plant's corrective action program must evaluate equipment failures and establish appropriate corrective actions. The BWROG responded to the staff RAI question concerning failure feedback by stating that each licensee that adopts the relaxed surveillance intervals recommended by the topical report should ensure that an appropriate feedback mechanism responsive to EFCV failure trends is in place.

The licensee stated that EFCV surveillance failures will be documented in the DNPS and QCNPS corrective action program as surveillance test failures. In addition, an EFCV failure will be evaluated and corrected per the licensee's EFCV condition monitoring program. The licensee's condition monitoring program will evaluate EFCV failures for common cause failures, applicable industry experience, and evaluate similar component failure history.

The licensee stated that EFCV testing will follow the same 10-year interval as the inservice test program. The EFCV condition monitoring program will be re-evaluated every two years. The evaluation will include EFCV test history (including potential changes to EFCV failure rates), corrective actions, common mode failures, industry experience and applicability of current test frequencies. The test frequencies must be periodically justified per the EFCV condition monitoring program and will provide a continued review of EFCV failures to assess EFCV performance trends.

The EFCVs will be grouped such that approximately 20 percent of the EFCVs will be tested within each group. Each group will include valves from a representative cross section of EFCV valve models, applications and environmental conditions. The licensee stated that if any EFCV should fail to check flow as a result of test method or valve failure an additional valve group will be tested prior to plant restart. If any valve should fail in the additional group, the testing

sample will be expanded to include all groups (100 percent of EFCVs). Any valve found to have failed its surveillance will be added to the group to be tested during the next refueling outage.

Based on its review, the staff finds that the licensee's program to account for potential changes in EFCV failure rates for both DNPS and QCNPS satisfies the TSTF-334 performance and corrective action criteria and is therefore acceptable.

3.3 Radiological Dose Assessment

The radiological consequences for an instrument line break have been previously evaluated by the licensee in the DNPS and QCNPS Updated Final Safety Analysis Report (UFSAR) Section 15.6.2, "Break in Reactor Coolant Pressure Boundary Instrument Line Outside Containment." The analysis does not credit the EFCVs for isolating the break. The UFSAR calculated potential offsite exposure for an instrument line break is well below the guidelines of 10 CFR 100, "Reactor Site Criteria" and as a result a failure of an EFCV to close is bounded by the instrument line break analysis.

Based on the above, the staff agrees with the licensee's determination that the current licensing basis remains applicable for the proposed EFCV surveillance interval with regard to the potential radiological consequences of an instrument line break with failure of the EFCV to isolate.

3.4 Conformance of the proposed TS to generic TSTF guidance

The DNPS and QCNPS TS SR 3.6.1.3.8 currently requires verification that each reactor instrumentation line EFCV be demonstrated OPERABLE at least once every 24 months by verifying the valve actuates to the isolation position on an actual or simulated instrument line break signal. The current sentence in TS SR 3.6.1.3.8 will be revised to read, "Verify a representative sample of reactor instrumentation line EFCVs actuate to the isolation position on an actual or simulated instrument line break signal."

The term "representative sample," as proposed by the topical report and TSTF-334 is not defined in the TS itself. However, the BWROG, in response to the staff RAI, stated that the term "representative sample," with an accompanying explanation in the TS Bases, is identical to the usage that was used in STS, NUREG-1433, Revision 1. Specifically, NUREG-1433 Revision 1 used the term "representative" in TS SR 3.8.6.3 in reference to battery cell testing. NUREG-1433 Revision 2 uses "representative sample" in SR 3.1.4.2 for verification of control rod scram times. The criterion for "representative sample" and the basis for the nominal 10-year testing interval are provided in the licensee's submittal, and are similar to Insert 1 and Insert 2 in the staff's approved TSTF-334, Revision 2. The staff reviewed the revised TS wording in SR 3.6.1.3.8 and finds the proposed revision to be consistent with TSTF-334 and TS generic guidance. The licensee also included in its submittal a revised Bases for SR 3.6.1.3.8 that includes a discussion of the EFCV test frequency and the term "representative sample." The application of a "representative sample" for the EFCV testing SR, with an accompanying explanation in the TS Bases, is consistent with TSTF-334, Revision 2, and is therefore, acceptable to the staff.

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

As demonstrated in Topical Report NEDO-32977-A, the impact of an increase in the EFCV surveillance test interval to 10 years results in an instrument line release frequency considered by the staff to be sufficiently low, especially since the consequences of an EFCV failure are bounded by previous licensee analysis. The licensee's evaluation results for DNPS (including the plant specific EFCV failure data and release frequency) is consistent with the topical report composite results. The evaluation for QCNPS resulted in a EFCV failure rate and release frequency that was larger than the topical report results. However, based on the licensee's revised test methodology, the EFCV failures for QCNPS would be reduced and EFCV failure rates would be comparable to the industry composite failure rates referenced in the topical report. The staff concludes that the release frequency associated with the DNPS and QCNPS request for relaxation of EFCV surveillance testing is sufficiently low and therefore acceptable.

The topical report established that each plant's corrective action program must evaluate equipment failures and establish appropriate corrective actions. These programs ensure that meaningful feedback data is acquired so that appropriate corrective action may be taken with regard to EFCV performance. The licensee provided information to the staff regarding EFCV performance criteria for both the DNPS and QCNPS EFCV corrective action and condition monitoring programs. The staff finds the licensee's programs to be in conformance with TSTF-334, Revision 2, and the topical report and thus is acceptable to the staff.

Based on the evaluations discussed in this safety evaluation, the staff finds that the proposed change to relax the DNPS and QCNPS instrument line EFCV surveillance frequency by allowing a representative sample of EFCVs to be tested every 24 months, with all EFCVs being tested at least once every 10 years to be consistent with TSTF-334 generic guidance, Topical Report NEDO-32977-A, and the staff's March 14, 2000 SE and is therefore acceptable.

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.

Principal Contributor: C. Douth

Date: October 10, 2003