

July 17, 2002

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENTS RE: EMERGENCY DIESEL GENERATOR REQUIRED START
TIME (TAC NOS. MB4962 AND MB4963)

Dear Mr. Skolds:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 206 to Facility Operating License No. DPR-29 and Amendment No. 202 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application dated May 1, 2002.

The amendments revise the start delay time for the emergency diesel generators from " ≤ 10 seconds" to " ≤ 13 seconds."

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

Sincerely,

/RA/

Carl F. Lyon, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosures: 1. Amendment No. 206 to DPR-29
2. Amendment No. 202 to DPR-30
3. Safety Evaluation

cc w/encls: See next page

July 17, 2002

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: EMERGENCY DIESEL GENERATOR REQUIRED START TIME (TAC NOS. MB4962 AND MB4963)

Dear Mr. Skolds:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 206 to Facility Operating License No. DPR-29 and Amendment No. 202 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application dated May 1, 2002.

The amendments revise the start delay time for the emergency diesel generators from “≤ 10 seconds” to “≤ 13 seconds.”

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

Sincerely,
/RA/
Carl F. Lyon, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

- Enclosures: 1. Amendment No. 206 to DPR-29
2. Amendment No. 202 to DPR-30
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC OGC, O15B18 SSaba PD3-2 r/f
ACRS, T2E26 RCaruso FLyon GHill (4), T5C3
AMendiola RDennig CRosenberg MRing, RIII

ADAMS Accession Number: ML021780140

OFFICE	PDIII-2/PM	PDIII-2/LA	EEIB/SC	SRXB/SC	OGC	PDIII-2/SC
NAME	FLyon	CRosenberg	CHolden	UShoop for RCaruso	RWeisman	GDick for AMendiola
DATE	07/01/02	06/25/02	07/02/02	07/02/02	07/10/02	07/11/02

OFFICIAL RECORD COPY

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

William D. Leech
Manager - Nuclear
MidAmerican Energy Company
P.O. Box 657
Des Moines, IA 50303

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 Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, IL 62704

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
Mid-West Operations Support
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Senior Vice President
Mid-West Regional Operating Group
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

Quad Cities Nuclear Power Station Units 1 and 2

- 2 -

Senior Counsel, Nuclear
Mid-West Regional Operating Group
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

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

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. 206
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 May 1, 2002, 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. 206 , 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 issuance and shall be implemented within 30 days following the date when General Electric (GE)-14 fuel is loaded into the reactor, which is scheduled during refueling outage 17 in November 2002. The amendment may not be implemented prior to the date GE-14 fuel is loaded into the reactor.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by G. F. Dick 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: July 17, 2002

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. 202
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 May 1, 2002, 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. 202 , 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 completion of Unit 1 refueling outage 17, which is scheduled for November 2002.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by G. F. Dick 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: July 17, 2002

ATTACHMENT TO LICENSE AMENDMENT NOS. 206 AND 202

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

DOCKET NOS. 50-254 AND 50-265

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by number and contain marginal lines indicating the area of change.

<u>Remove Pages</u>	<u>Insert Pages</u>
3.8.1-8	3.8.1-8
3.8.1-10	3.8.1-10
3.8.1-11	3.8.1.11
3.8.1-13	3.8.1-13
3.8.1-14	3.8.1-14
3.8.1-15	3.8.1-15

The following revised TS Bases pages are provided for information only:

B 3.3.5.1-9
B 3.8.1-5
B 3.8.1-6
B 3.8.1-19
B 3.8.1-26
B 3.8.1-27
B 3.8.1-30
B 3.8.2-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 206 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 202 TO FACILITY OPERATING LICENSE NO. DPR-30
EXELON GENERATION COMPANY, LLC
AND
MIDAMERICAN ENERGY COMPANY
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
DOCKET NOS. 50-254 AND 50-265

1.0 INTRODUCTION

By application dated May 1, 2002, Exelon Generation Company, LLC (the licensee) requested changes to the Technical Specifications (TSs) for the Quad Cities Nuclear Power Station, Units 1 and 2. The application and the staff's proposed no significant hazards consideration determination were noticed in the *Federal Register* on May 28, 2002 (67 FR 36931).

The proposed changes to the Technical Specifications (TSs) would revise the start delay time for the emergency diesel generators (EDGs) from " ≤ 10 seconds" to " ≤ 13 seconds." The proposed changes are being requested to preclude potential unnecessary conditions of EDG inoperability if an EDG does not start within the currently specified 10-second start time, but does start within the revised time of 13 seconds assumed in the accident analyses. Specifically, the proposed changes would revise the EDG start delay time for the following surveillance requirements (SRs):

1.1 SR 3.8.1.8

The SR requires verification, every 184 days, that each EDG starts from standby condition and achieves required voltage and frequency in ≤ 10 seconds.

1.2 SR 3.8.1.12

The SR requires verification, every 24 months, that on actual or simulated loss-of-offsite power signal, each EDG auto-starts from standby condition and energizes permanently connected loads in ≤ 10 seconds.

1.3 SR 3.8.1.13

The SR requires verification, every 24 months, that on an actual or simulated emergency core cooling systems (ECCS) initiation signal, each EDG auto-starts from standby condition and achieves required voltage and frequency in ≤ 10 seconds.

1.4 SR 3.8.1.16

The SR requires verification, every 24 months, that within 5 minutes after EDG shutdown following operation for ≥ 2 hours at a load of ≥ 2340 kilowatts, each EDG starts and achieves required voltage and frequency in ≤ 10 seconds.

1.5 SR 3.8.1.19

The SR requires verification, every 24 months, that on an actual or simulated loss-of-offsite power signal in conjunction with an actual or simulated ECCS initiation signal, each EDG auto-starts from standby condition and energizes permanently connected loads in ≤ 10 seconds.

1.6 SR 3.8.1.20

The SR requires verification, every 10 years, that when started simultaneously from standby condition, each EDG achieves required voltage and frequency in ≤ 10 seconds.

2.0 REGULATORY EVALUATION

The function of the EDGs is to provide an onsite emergency power source of alternating current electrical power to engineered safety feature (ESF) systems in the event the normal offsite power becomes unavailable. The onsite power source is required by general design criteria (GDC) 17 of Appendix A to 10 CFR Part 50. An exemption to GDC 17 was granted to Quad Cities, due to its low pressure coolant injection swing bus design, by letter from R. Barrett (NRC) to T. Kovach (licensee) dated December 7, 1990. The Quad Cities EDGs are discussed in the Updated Final Safety Analysis Report (UFSAR) section 8.3.1.6. The operability requirements for the EDGs provide assurance that a reliable source of emergency power is available to power the ESF equipment assumed to function in the design basis loss-of-coolant-accident (LOCA) analysis. The design basis LOCA analysis for Quad Cities is described in UFSAR section 6.3.

The EDGs automatically start on an ESF bus degraded voltage or undervoltage signal or on a LOCA signal, and provide emergency power, if necessary, to ESF loads on their emergency buses. The previously described six SRs utilized to verify EDG operability specify that either the EDGs must start and achieve required frequency and voltage, or the EDGs must start and energize the permanently connected loads on their emergency buses, within a required time limit. In either case, currently the required time, ≤ 10 seconds, is the same for all of these SRs. This required time limit is derived from ECCS delivery timing requirements of the accident analysis for responding to a design basis LOCA. The ECCS requirements are derived, in part, from GDC 35, 10 CFR 50.46, and Appendix K to 10 CFR Part 50.

The original TSs at Quad Cities did not specify a start delay time limit for EDG SRs. A 13-second time limit was proposed by the licensee as part of its TS Upgrade Project and was approved by the NRC in Amendment Nos. 160 and 156, dated September 18, 1995. The safety evaluation for the amendment stated that a 13-second limit was "consistent with the current LOCA analysis assumptions" and "an enhancement of the current TS which does not contain this surveillance." Subsequently, the licensee proposed to reduce the start time delay limit from 13 seconds to 10 seconds. The 10-second start requirement was approved by the NRC in Amendment Nos. 171 and 167, dated June 28, 1996, and its associated safety evaluation, which stated in part that, "Based on the current LOCA analysis assumptions for Quad Cities it is more appropriate to use a start time of 10 seconds." Consequently, the 10-second start requirement was specified in the SRs that verified EDG starting capability.

By Amendment Nos. 201 and 197, dated December 20, 2001, the NRC approved changes in the TSs to reflect a change in fuel vendors at Quad Cities from Siemens Power Corporation (SPC) to General Electric (GE) and a transition to GE-14 fuel. The new design basis LOCA analysis for GE-14 fuel can accommodate an assumed EDG start time delay of 13 seconds. The GE-14 LOCA analysis applies to both transitional reactor cores fueled partially with GE-14 fuel and partially with other GE fuel and SPC fuel, and to reactor cores fueled completely with GE-14 fuel.

The staff concludes that the proposed TS changes will maintain compliance with the regulatory requirements of GDCs 17 and 35, 10 CFR 50.46, and Appendix K to 10 CFR Part 50.

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 Attachment A of the licensee's submittal. The licensee proposes to change the EDG start time limit in the previously described SRs from " ≤ 10 seconds" to " ≤ 13 seconds." The revised EDG start time limit will reduce the potential for failure to achieve the unnecessarily conservative time limit for cores including GE-14 fuel currently specified in the SRs. Therefore, the proposed change will reduce the number of potential entries into TS-required actions for EDG inoperability, along with the unnecessary subsequent maintenance activities required to return the EDG to service.

Quad Cities Units 1 and 2 are provided with sufficient and independent alternating current power sources to assure safe reactor shutdown under emergency conditions of a total loss-of-offsite power (LOOP) concurrent with a LOCA. This capability is attained by use of an EDG power source supplying reliable power to an emergency bus that supplies the ECCS required to mitigate the consequences of a LOCA. The EDGs are normally shutdown in a standby condition. Since an EDG cannot start and accelerate to rated speed and voltage instantaneously, there is a time delay before the EDG is at sufficient voltage and frequency to supply its emergency bus. Therefore, the design basis LOCA analysis assumes a specified time delay for EDG starting during a LOOP and associated ECCS pump load sequencing delays. An important result in the analysis, in which EDG start time is one factor that is considered, is the time it takes from accident initiation until emergency cooling water is supplied to the reactor. The EDG start time is adequate as long as the emergency cooling water is

supplied in sufficient time and quantity for the safety analysis to demonstrate reactor protection as described, in part, by GDCs 17 and 35.

For Quad Cities, the specified EDG start time delay limit in the design basis LOCA analysis for GE-14 fuel is 13 seconds. The use of GE-14 fuel at Quad Cities was approved by the NRC in Amendment Nos. 201 and 197, dated December 20, 2001. As noted in the safety evaluation for the amendment, the NRC has previously approved the methodology used for accident analyses done with GE-14 fuel and co-resident SPC fuel, in part, (1) SPC Topical Report EMF-85-74(P), "RODEX2A (BWR) Fuel Rod Thermal Mechanical Evaluation Model," Supplement 1(P)(A) and Supplement 2(P)(A), February 1998, (2) GE Topical Report NEDC-32981P, "GEXL96 Correlation for Atrium 9B Fuel," September 2000, and (3) GE Topical Report NEDE-24011-P-A, "GESTAR II," Rev. 14, June 2000.

The proposed increase of the time allowed for EDG starts from " ≤ 10 seconds" to " ≤ 13 seconds" is consistent with the integrated EDG and ECCS sequencing time delay assumed in the Quad Cities design basis LOCA analysis for GE-14 fuel. The GE-14 LOCA analysis applies to both transitional reactor cores fueled partially with GE-14 fuel and partially with other GE fuel and SPC fuel, and to reactor cores fueled completely with GE-14 fuel. The SRs are utilized to verify that the EDGs perform in accordance with the requirements assumed in the accident analysis. Therefore, the staff concludes that the proposed change in start time delay limit from 10 seconds to 13 seconds for the previously described six SRs is acceptable.

The licensee also proposes changes to the TS Bases to reflect the proposed changes to the TSs. The staff has no objection to the proposed changes to the TS Bases.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change an inspection or a surveillance requirement. 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 (67 FR 36931). 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.

Principal Contributor: F. Lyon

Date: July 17, 2002