

June 10, 1994

Docket Nos. 50-254
and 50-265

Mr. D. L. Farrar
Manager, Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III, Suite 500
1400 OPUS Place
Downers Grove, Illinois 60515

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OC/LFDCB	PDIII-2 r/f
T. Collins	

Dear Mr. Farrar:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M88663 AND M88664)

The Commission has issued the enclosed Amendment No. 146 to Facility Operating License No. DPR-29 and Amendment No. 142 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 December 20, 1993.

The amendments increase the minimum critical power ratio (MCPR) from 1.06 to 1.07 for Quad Cities Nuclear Power Station, Units 1 and 2, as a result of the planned implementation of GE 8x8NB-3 fuel for Cycle 14 of each unit.

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,

Original Signed By:

Chandu P. Patel, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 146 to DPR-29
2. Amendment No. 142 to DPR-30
3. Safety Evaluation

cc w/enclosures:
See next page

RECEIVED NRC OFFICE OF NUCLEAR REACTOR REGULATION
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OFC	LA:PDIII-2	PM:PDIII-2	D:PDIII-2	OGC <i>WJG</i>	(A)D:SRXB	
NAME	CHAWES <i>CMW</i>	CPATEL <i>CPD</i>	RCAPRA <i>RCR</i>	<i>W Young</i>	TCOLLINS	
DATE	6/2/94	6/2/94	6/9/94	6/6/94	6/2/94	1/94
COPY	(YES/NO)	YES/NO	(YES/NO)	YES/NO	YES/NO	YES/NO

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cc w/enclosures:
See next page

OFC	LA:PDIII-2	PM:PDIII-2	D:PDIII-2	OGC <i>Wolinski</i>	<i>Patel</i> (A) D:SRXB	
NAME	CHAWES <i>CHW</i>	CPATEL <i>CP</i>	RCAPRA <i>ROE</i>	<i>Wolinski</i>	TCOLLINS	
DATE	6/2/94	6/2/94	6/9/94	6/6/94	6/2/94	1/94
COPY	(YES/NO)	YES/NO	(YES/NO)	YES/NO	YES/NO	YES/NO

marked
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issuance



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 10, 1994

Docket Nos. 50-254
and 50-265

Mr. D. L. Farrar
Manager, Nuclear Regulatory Services
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Dear Mr. Farrar:

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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,

Chandu P. Patel

Chandu P. Patel, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Enclosures:

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2. Amendment No. 142 to DPR-30
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. D. L. Farrar
Commonwealth Edison Company

Quad Cities Nuclear Power Station
Unit Nos. 1 and 2

cc:

Mr. Stephen E. Shelton
Vice President
Iowa-Illinois Gas and
Electric Company
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Resident Inspector
U. S. Nuclear Regulatory Commission
22712 206th Avenue North
Cordova, Illinois 61242

Chairman
Rock Island County Board
of Supervisors
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Rock Island, Illinois 61201

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
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Springfield, Illinois 62704

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



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 146
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 20, 1993, 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:

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B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 146 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra

Robert A. Capra, Director
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 10, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 146

FACILITY OPERATING LICENSE NO. DPR-29

DOCKET NO. 50-254

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

1.1/2.1-1

INSERT

1.1/2.1-1

1.1/2.1 FUEL CLADDING INTEGRITY

SAFETY LIMIT

Applicability:

The safety limits established to preserve the fuel cladding integrity apply to those variables which monitor the fuel thermal behavior.

Objective:

The objective of the safety limits is to establish limits below which the integrity of the fuel cladding is preserved.

LIMITING SAFETY SYSTEM SETTING

Applicability:

The limiting safety system settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity safety limits from being exceeded.

Objective:

The objective of the limiting safety system settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity safety limits from being exceeded.

SPECIFICATIONS

- A. Reactor Pressure > 800 psig
and Core Flow > 10% of Rated

The existence of a minimum critical power ratio (MCPR) less than 1.07 shall constitute violation of the fuel cladding integrity safety limit.

- A. Neutron Flux Trip Settings

The limiting safety system trip settings shall be as specified below:

1. APRM Flux Scram Trip Setting (Run Mode)

When the reactor mode switch is in the Run position, the APRM flux scram setting shall be as shown in Figure 2.1-1 and shall be:

$$S \leq (.58W_p + 62)$$

with a maximum setpoint of 120% for core flow equal to 98×10^6 lb/hr and greater.

where

S = setting in percent of rated power



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 142
License No. DPR-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 20, 1993, 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. 142, 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. It should be implemented after completion of Cycle 13 and prior to the startup from a refueling outage for Cycle 14.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Capra, Director
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 10, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 142

FACILITY OPERATING LICENSE NO. DPR-30

DOCKET NO. 50-265

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

1.1/2.1-1

INSERT

1.1/2.1-1

1.1/2.1 FUEL CLADDING INTEGRITY

SAFETY LIMIT

Applicability:

The safety limits established to preserve the fuel cladding integrity apply to those variables which monitor the fuel thermal behavior.

Objective:

The objective of the safety limits is to establish limits below which the integrity of the fuel cladding is preserved.

LIMITING SAFETY SYSTEM SETTING

Applicability:

The limiting safety system settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity safety limits from being exceeded.

Objective:

The objective of the limiting safety system settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity safety limits from being exceeded.

SPECIFICATIONS

- A. Reactor Pressure > 800 psig and Core Flow > 10% of Rated
- The existence of a minimum critical power ratio (MCPR) less than 1.07 shall constitute violation of the fuel cladding integrity safety limit.
- B. Core Thermal Power Limit (Reactor Pressure \leq 800 psig)
- When the reactor pressure is \leq 800 psig or core flow is less than 10% of rated, the core thermal power shall not exceed 25% of rated thermal power.
- C. Power Transient
1. The neutron flux shall not exceed the scram setting established in Specification 2.1A for longer than 1.5 seconds as indicated by the process computer.
 2. When the process computer is out of service, this safety limit shall be assumed to be exceeded if the neutron flux exceeds the scram setting established by Specification 2.1.A and a control rod scram does not occur.

A. Neutron Flux Trip Settings

The limiting safety system trip settings shall be as specified below:

1. APRM Flux Scram Trip Setting (Run Mode)

When the reactor mode switch is in the Run position, the APRM flux scram setting shall be as shown in Figure 2.1.1 and shall be:

$$S \leq (.58W_D + 62)$$

with a maximum setpoint of 120% for core flow equal to 98×10^6 lb/hr and greater.

where

S = setting in percent of rated power

W_D = percent of drive flow required to produce a rated core flow of 98 million lb/hr. In the event of operation with a maximum fraction of limiting power density (MFLPD) greater than the fraction of rated power (FRP), the setting shall be modified as follows:

$$S \leq (.58W_D + 62) \left[\frac{FRP}{MFLPD} \right]$$



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 146 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-254 AND 50-265

1.0 INTRODUCTION

By letter dated December 20, 1993, Commonwealth Edison Company (CECo, the licensee) proposed a change to the Technical Specifications (TS) for Quad Cities Nuclear Power Station, Units 1 and 2. The proposed change reflects the use of generically approved fuel type GE 8x8NB-3 (GE10) by changing the Minimum Critical Power Ratio (MCPR) safety limit from 1.06 to 1.07 starting from Cycle 14 of each unit.

2.0 DISCUSSION AND EVALUATION

The licensee plans to load GE10 fuel in Quad Cities, Units 1 and 2 for Cycle 14 of each unit. The GE10 fuel design has evolved from the NRC approved GE 8x8NB design. The GE10 design includes the features of GE 8x8NB fuel plus the combination of interactive channel design and the offset lower tie plate toward the control blade. This modification makes the D-lattice channel design of BWR-3 plants more agreeable with the C-lattice channel design of BWR-5 plants in analyses. The new fuel design options have been analyzed with approved methods and the results are acceptable.

The licensee has proposed to increase the MCPR Safety Limit from 1.06 to 1.07 for Quad Cities, Units 1 and 2. The proposed change is based on General Electric Standard Application for Reactor Fuel II (GESTAR II) NEDE-24011-P-A-10 conclusions that the GE8x8NB C-lattice MCPR limit safety of 1.07 is acceptable for GE10 fuel designs loaded in D-lattice cores. The NRC has previously reviewed and approved the MCPR Safety Limit for GE10 design in Amendment 21 to GESTAR II by a letter from A. Thadani to J. Chanley dated March 17, 1989. The staff concluded that the use of C-lattice MCPR limit for the offset lower plate option is conservative for D-lattice cores. These conclusions are applicable to the D-lattice core at Quad Cities. Based on the above discussion, the staff concludes that the proposed increase in MCPR limit is acceptable.

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3.0 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.

4.0 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 (59 FR 10003). 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.

5.0 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: Chandu P. Patel

Date: June 10, 1994