

January 28, 2000

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: QUAD CITIES - ISSUANCE OF AMENDMENTS ON REPLACEMENT OF
PRESSURE SWITCHES (TAC NOS. MA7151 AND MA7152)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 194 to Facility Operating License No. DPR-29 and Amendment No. 190 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 November 16, 1999.

The amendments change Technical Specification Table 4.1.A-1, "Reactor Protection System Instrumentation Surveillance Requirements," to modify the surveillance requirements for Function Unit 3, "Reactor Vessel Steam Dome Pressure - High," to reflect replacement of the pressure switches with analog trip units.

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/

Stewart N. Bailey, 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. 194 to DPR-29
- 2. Amendment No. 190 to DPR-30
- 3. Safety Evaluation

cc w/encls: See next page

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*concur by memo dated 1/6/00; no major revisions

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Commonwealth Edison Company

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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 194
License No. DPR-29

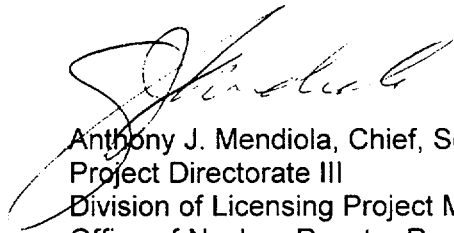
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 16, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules 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. 194 , 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 before startup from Refueling Outage 16.

FOR THE NUCLEAR REGULATORY COMMISSION



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: January 28, 2000



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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 190
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 November 16, 1999, 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. 190 , 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 before startup from Refueling Outage 15.

FOR THE NUCLEAR REGULATORY COMMISSION



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: January 28, 2000

ATTACHMENT TO LICENSE AMENDMENT NOS. 194 AND 190

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 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

3/4.1-7
3/4.1-10

INSERT

3/4.1-7
3/4.1-10

TABLE 4.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Functional Unit</u>	<u>Applicable OPERATIONAL MODES</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL^(a) CALIBRATION</u>
1. Intermediate Range Monitor:				
a. Neutron Flux - High	2 3, 4, 5	S ^(b) S	S/U ^(c) , W ^(o) W ^(o)	E ^(o) E ^(o)
b. Inoperative	2, 3, 4, 5	NA	W ^(o)	NA
2. Average Power Range Monitor ^(f) :				
a. Setdown Neutron Flux - High	2 3, 5 ^(m)	S ^(b) S	S/U ^(c) , W ^(o) W ^(o)	SA ^(o) SA ^(o)
b. Flow Biased Neutron Flux - High	1	S, D	W	W ^(d,e) , SA
c. Fixed Neutron Flux - High	1	S	W	W ^(d) , SA
d. Inoperative	1, 2, 3, 5 ^(m)	NA	W	NA
3. Reactor Vessel Steam Dome Pressure - High	1, 2 ⁽ⁱ⁾	D ^(a)	M	Q ^{(h)(q)}
4. Reactor Vessel Water Level - Low	1, 2	D	M	E ^(h)
5. Main Steam Line Isolation Valve - Closure	1	NA	M	E
6. Main Steam Line Radiation - High	1, 2 ⁽ⁱ⁾	S	M	E ^(p)
7. Drywell Pressure - High	1, 2 ⁽ⁿ⁾	NA	M	Q

TABLE 4.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

- (l) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.
- (m) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.
- (n) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (o) The provisions of Specification 4.0.D are not applicable to the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION surveillances for a period of 24 hours after entering OPERATIONAL MODE 2 or 3 when shutting down from OPERATIONAL MODE 1.
- (p) A current source provides an instrument channel alignment every 3 months.
- (q) The CHANNEL CHECK frequency will remain NA and the CHANNEL CALIBRATION frequency will remain Q for Functional Unit 3 until instrument upgrades are completed (Design Change Package Nos. 9900090 for Unit 1 and 9900091 for Unit 2).



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 194 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-30
COMMONWEALTH EDISON COMPANY
AND
MIDAMERICAN ENERGY COMPANY
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
DOCKET NOS. 50-254 AND 50-265

1.0 INTRODUCTION

By letter dated November 16, 1999, Commonwealth Edison Company (ComEd, or the licensee) proposed license amendments to change the Technical Specifications (TSs) for Quad Cities Nuclear Power Station, Units 1 and 2 (Quad Cities). The proposed change to TS Section 3/4.1.A, "Reactor Protection System" (RPS), modifies the surveillance requirements (SR) for RPS Functional Unit 3, "Reactor Vessel Steam Dome Pressure - High." This change supports the licensee's planned upgrade to the subject instrumentation from pressure switches (Barksdale) to analog trip units (Rosemount). This change also adds a 31-day trip unit calibration consistent with other installed analog trip unit devices.

TS Section 3/4.1.A presents the requirements for RPS instrumentation. TS Table 4.1.A-1, "Reactor Protection System Instrumentation Surveillance Requirements," establishes the SRs for the RPS functional units, including the reactor vessel steam dome pressure - high trip function. The SRs include Applicable OPERATIONAL MODES and the surveillance frequencies for CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION. The OPERATIONAL MODES requirement is so modified by Table 4.1.A-1, footnote (i) that the function is not required to be OPERABLE when the reactor head is unbolted or removed. In addition, the CHANNEL CHECK requirements are not applicable because the current instrumentation (Barksdale pressure switches) is non-indicating and does not provide for a CHANNEL CHECK.

2.0 BACKGROUND

The protection and monitoring functions of the RPS have been designed to ensure safe operation of the reactor. The RPS initiates a reactor trip when one or more monitored parameters exceed their specified limits, to preserve the integrity of the fuel cladding and the

reactor coolant system (RCS) and minimize the energy that must be absorbed following a Loss-of-Coolant Accident (LOCA).

The RPS monitors reactor operation and initiates protective action in the event of an unsafe condition that may cause reactor pressure vessel (RPV) damage or subject personnel to a potentially hazardous environment. Monitoring is performed by two separately powered RPS trip systems, each having a minimum of two channels of tripping devices. The outputs of the channels are combined in a one-out-of-two taken twice logic.

High reactor pressure is one of the reactor operating parameters monitored by the RPS. The purpose of the reactor high-pressure trip is to limit the positive pressure effect on reactor power. This reactor trip is established to reduce the heat generation within the reactor whenever the high pressure setpoint is reached. This trip is required to be functional in OPERATIONAL MODES 1 and 2.

The TSs require instrumentation important to safety, including the RPS, to be tested at a specified interval to ensure a high degree of safety system reliability. A CHANNEL CHECK is defined as a qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to others derived from independent instrument channels measuring the same parameter. A periodic CHANNEL CALIBRATION is also required to ensure the instrument is operating in accordance with design-basis requirements.

3.0 EVALUATION

The current instrumentation for Functional Unit 3, "Reactor Vessel Steam Dome Pressure - High," utilizes Barksdale pressure switches. The Barksdale pressure switches do not provide the necessary indication output to observe channel behavior during operation. For this reason, the current TSs do not provide a CHANNEL CHECK requirement. In addition, a periodic calibration of the trip units is not required because the Barksdale pressure switches provide direct input into the RPS and do not utilize analog trip devices.

The Barksdale pressure switches are extremely sensitive to vibration. They are also difficult to calibrate and have a tendency to drift. Since the pressure switches provide the logic actuation contacts for an RPS trip, any false indication may initiate a spurious half-scam.

The existing Barksdale pressure switches will be replaced with Rosemount pressure transmitters that will utilize an analog trip unit and a master trip relay to interface with the existing RPS logic. The replacement Rosemount units have a higher reliability and, thus, will give a more accurate indication of reactor vessel pressure. The overall effect of this activity is to provide a function identical to the previous reactor vessel steam dome high pressure trip. The design will maintain compliance with the commitments identified in the Updated Final Safety Analysis Report (UFSAR) for RPS and analog trip system instrumentation.

The staff concludes that the licensee's proposed change will increase reliability and produce better overall performance of the trip function and, therefore, is acceptable.

To accommodate the design change, the TSs are being changed in order to add a CHANNEL CHECK requirement. The Rosemount design will provide an output indication that is used to perform a CHANNEL CHECK similar to other analog trip devices. In addition, to maintain consistency with other analog trip devices, the trip units will be calibrated every 31 days. These proposed changes align the SRs for Function Unit 3 with other instruments with similar design features.

Rosemount units are being used in a number of applications at Quad Cities. The addition of a CHANNEL CHECK and a 31-day trip unit calibration for Functional Unit 3 provides SRs not possible on the original design, but appropriate for this design change. For these reasons, the proposed change is acceptable and does not involve a reduction in plant safety.

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 surveillance requirements. 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 (64 FR 70082). 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: S. Rhow

Date: January 28, 2000