

FEB 3 1976

Docket Nos. 50-254 and 50-265

Commonwealth Edison Company
ATTN: Mr. R. L. Bolger
Assistant Vice President
Post Office Box 767
Chicago, Illinois 60690

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 22 and 21 to Facility License Nos. DPR-29 and DPR-30 (respectively) for the Quad Cities Nuclear Power Station Units 1 and 2. The amendments include changes to the Technical Specifications based on our letters to you dated September 22, 1975 and December 3, 1975.

These amendments revise the Technical Specifications to (1) add requirements that would limit the period of time operation can be continued with immovable control rods that could have control rod drive mechanism collet housing failures and (2) require increased control rod surveillance when the possibility of a control rod drive mechanism collet housing failure exists.

We have evaluated the potential for environmental impact of plant operation in accordance with the enclosed amendments and have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level, and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR § 51.5(d)(4) that an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of these amendments. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action.

A copy of the related Federal Register Notice is also enclosed. Our Safety evaluation relating to this action was forwarded to you with our letter dated September 22, 1975.

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Please note that we have discontinued the use of separate identifying numbers for changes to technical specifications. Sequential amendment numbers will be continued as in the past.

Sincerely,

Original signed by

Dennis L. Ziemann
 Dennis L. Ziemann, Chief
 Operating Reactors Branch #2
 Division of Operating Reactors

Enclosures:

1. Amendment Nos. 22 and 21 to License Nos. DPR-29 and DPR-30.
2. Federal Register Notice

cc w/enclosures:
 See next page

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DATE	1/29/76	1/20/76	2/2/76	2/3/76	2/3/76

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cc w/enclosures:

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President and Chairman
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Electric Company
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Mr. Robert W. Watts, Chairman
Rock Island County Board of
Supervisors
Rock Island County Court House
Rock Island, Illinois 61201

Mr. Leroy Stratton
Bureau of Radiological Health
Illinois Department of Public Health
Springfield, Illinois 62706

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NOS. 50-254 AND 50-265

QUAD CITIES NUCLEAR POWER STATION UNITS 1 AND 2

AMENDMENT TO FACILITY OPERATING LICENSES

Amendment No. 22
License No. DPR-29

Amendment No. 21
License No. DPR-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. 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;
 - B. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - C. The facility will operate in conformity with the provisions of the Act, and the rules and regulations of the Commission; and
 - D. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the licenses are amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License Nos. DPR-29 and DPR-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised.

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3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: **FEB 3 1976**

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ATTACHMENT TO LICENSE AMENDMENT NOS. 22 AND 21

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

DOCKET NOS. 50-254 AND 50-265

Delete existing pages 71, 72 and 81 of the Technical Specifications contained in Appendix A and insert the attached revised pages bearing the same numbers. The changed areas on the revised pages are shown by marginal lines.

3.3 REACTIVITY CONTROLApplicability:

Applies to the operational status of the control rod system.

Objective:

To assure the ability of the control rod system to control reactivity.

Specification:

A. Reactivity Limitations

1. Reactivity margin - core loading

The core loading shall be limited to that which can be made subcritical in the most reactive condition during the operating cycle with the strongest operable control rod in its full-out position and all other operable rods fully inserted.

2. Reactivity margin - inoperable control rods

a. Control rod drives which cannot be moved with control rod drive pressure shall be considered inoperable, except as in c. below. If a partially or fully withdrawn control rod drive cannot be moved with drive or scram pressure the reactor shall be brought to a shutdown condition within 48 hours unless investigation demonstrates that the cause of the failure is not due to a failed control rod drive mechanism collet housing.

4.3 REACTIVITY CONTROLApplicability:

Applies to the surveillance requirements of the control rod system.

Objective:

To verify the ability of the control rod system to control reactivity.

Specification:

A. Reactivity Limitations

1. Reactivity margin - core loading

Sufficient control rods shall be withdrawn following a refueling outage when core alterations were performed to demonstrate with a margin of $0.25\% \Delta k$ that the core can be made subcritical at any time in the subsequent fuel cycle with the strongest operable control rod fully withdrawn and all other operable rods fully inserted.

2. Reactivity margin - inoperable rods

Each partially or fully withdrawn operable control rod shall be exercised one notch at least once each week. This test shall be performed at least once per 24 hours in the event power operation is continuing with three or more inoperable control rods or in the event power operation is continuing with one fully or partially withdrawn rod which cannot be moved and for which control rod drive mechanism damage has not been ruled out. The surveillance need not be completed within 24 hours if

3.3 LIMITING CONDITION FOR OPERATION

- b. The control rod directional control valves for inoperable control rods shall be disarmed electrically and the control rods shall be in such positions that Specification 3.3.A.1 is met except as in d. below.
- c. Control rod drives which are fully inserted and electrically disarmed shall not be considered inoperable.
- d. Control rods with scram times greater than those permitted by Specification 3.3.C are inoperable, but if they can be moved with control rod drive pressure they need not be disarmed electrically if Specification 3.3.A.1 is met for each position of these rods.
- e. During reactor power operation, the number of inoperable control rods shall not exceed eight.

3. Rod Position Indication System

- a. The position of a control rod shall be determined from the Rod Position Indication System (RPIS).

4.3 SURVEILLANCE REQUIREMENT

the number of inoperable rods has been reduced to less than three and if it has been demonstrated that control rod drive mechanism collet housing failure is not the cause of an immovable control rod.

3. Rod Position Indication System

- a. Once per shift during power operation and during control rod withdrawal the control rod display shall be observed for control rod position indication.

3.3 Limiting Condition for Operation Bases (cont'd)

reactivity limitation stated in Specification 3.3.A.1. This assures that the core can be shutdown at all times with the remaining control rods assuming the strongest operable control rod does not insert. An allowable pattern for control rods valved out of service, which shall meet the specification, will be available to the operator. The number of rods permitted to be inoperable could be many more than the eight allowed by the specification, particularly late in the operation cycle; however, the occurrence of more than eight could be indicative of a generic control rod drive problem and the reactor will be shutdown.

Also if damage within the control rod drive mechanism and in particular, cracks in drive internal housings, cannot be ruled out, then a generic problem affecting a number of drives cannot be ruled out. Circumferential cracks resulting from stress assisted intergranular corrosion have occurred in the collet housing of drives at several BWRs. This type of cracking could occur in a number of drives and if the cracks propagated until severance of the collet housing occurred, scram could be prevented in the affected rods. Limiting the period of operation with a potentially severed collet housing and requiring increased surveillance after detecting one stuck rod will assure that the reactor will not be operated with a large number of rods with failed collet housings.

3. Rod Position Indication System (RPIS)

Normal control rod position is displayed by two digit indication to the operator from position 00 to 48. Each even number is a latching position, whereas each odd number provides information while the rod is in motion, and input for rod drift annunciation. The LCO provides for the condition where no positive information is displayed for a large portion or all

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of the rod's travel. In this case the rod is given a full insert signal, individually scrambled and treated as an inoperable rod. Usually only one digit of one or two of a rod's positions is unavailable with a faulty RPIS and the control rod may be located in a known position.

B. Control Rod Withdrawal

1. Control rod dropout accidents as discussed in the SAR can lead to significant core damage. If coupling integrity is maintained, the possibility of a rod dropout accident is eliminated. The overtravel position feature provides a positive check as only uncoupled drives may reach this position. Neutron instrumentation response to rod movement provides a verification that the rod is following its drive. Absence of such response to drive movement would indicate an uncoupled condition.
2. The control rod housing support restricts the outward movement of a control rod to less than 3 inches in the extremely remote event of a housing failure. The amount of reactivity which could be added by this small amount of rod withdrawal, which is less than a normal single withdrawal increment, will not contribute to any damage to the primary coolant system. The design basis is given in Section 6.6.1 and the design evaluation is given in Section 6.6.3 of the SAR. This support is not required if the reactor coolant system is at atmospheric pressure, since there would then be no driving force to rapidly eject a drive housing. Additionally, the support is not required if all control rods are fully inserted or if an adequate shutdown margin with one control rod withdrawn has been demonstrated, since the reactor would remain subcritical even in the event of complete ejection of the strongest control rod.

DOCKET NOS. 50-254 AND 50-265

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO
FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 22 and 21 to Facility Operating License Nos. DPR-29 and DPR-30 (respectively), issued to Commonwealth Edison Company (acting for itself and on behalf of the Iowa-Illinois Gas and Electric Company), which revised Technical Specifications for operation of the Quad Cities Station Units 1 and 2 (the facilities) located in Rock Island County, Illinois. The amendments are effective as of their date of issuance.

These amendments revise the Technical Specifications to (1) add requirements that would limit the period of time operation can be continued with immovable control rods that could have control rod drive mechanism collet housing failures and (2) require increased control rod surveillance when the possibility of a control rod drive mechanism collet housing failure exists.

The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter 1, which are set forth in the license amendments. Notice of the Proposed Issuance of Amendments to Facility Operating Licenses in connection with this action was published in the FEDERAL REGISTER on December 11, 1975 (40 FR 57723). No request for a hearing or petition for leave to

OFFICE	TO	intervene was	filed following	notice of	the proposed	action.		
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The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of the amendments.

For further details with respect to this action, see (1) the Commission's letters to Commonwealth Edison Company dated September 22, 1975, and December 3, 1975, (2) Amendment Nos. 22 and 21 to License Nos. DPR-29 and DPR-30, and (4) the Commission's related Safety Evaluation issued on September 22, 1975. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W. Washington, D. C. and at the Moline Public Library, 504 - 17th Street, Moline, Illinois 60625.

A single copy of items (1) through (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this

third day of February, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION
Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

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DATE →	1/27/76	1/30/76	2/2/76	2/3/76	2/3/76