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Docket Nos. 50-254
50-265

Commonwealth Edison Company
ATTN: Mr. J. S. Abel
Nuclear Licensing Administrator -
Boiling Water Reactors
Post Office Box 767
Chicago, Illinois 60690

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 16 and 13 to Facility License Nos. DPR-29 and DPR-30 for Units 1 and 2 of the Quad Cities Nuclear Power Station. These amendments include Change No. 28 to the Technical Specifications and is in response to Commonwealth Edison's request dated April 3, 1975.

These amendments add a provision to the Technical Specifications which allows bypassing the Rod Worth Minimizer for performing low power physics test to demonstrate shutdown margins.

Copies of the related Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

Original signed by
Dennis L. Ziemann

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

ACRS (12)
JRBuchanan, ORNL
TBAbernathy, DTIE

Enclosures:
1. Amendment Nos. 16 and 13 w/Change No. 28
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosures: see next page

OFFICE	RL:ORB #2	RL:ORB #2	OELD	RL:ORB #2		
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DATE	4/4/75	4/4/75	4/7/75	4/7/75		

cc w/enclosures:
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Mr. Robert W. Watts, Chairman
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cc w/enclosures and cy of CECo filing
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Mr. Ed Vest
Environmental Protection Agency
1735 Baltimore Avenue
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

COMMONWEALTH EDISON COMPANY AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NOS. 50-254 AND 50-265

QUAD CITIES UNITS 1 AND 2

AMENDMENT TO FACILITY OPERATING LICENSES

Amendment No. 16
License No. DPR-29

Amendment No. 13
License No. DPR-30

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendments by the Commonwealth Edison Company (the licensee) dated April 3, 1975, 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 these amendments 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; and

   D. The issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

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:

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

"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 by issued changes thereto through Change No. 28."

3. These license amendments are effective as of their date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Dennis L. Ziemann

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

Attachment:
Change No. 28 to
Technical Specifications

Date of Issuance: April 7, 1975

ATTACHMENT TO LICENSE AMENDMENT NOS. 16 AND 13

CHANGE NO. 28 TO THE TECHNICAL SPECIFICATIONS

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

DOCKET NOS. 50-254 AND 50-265

Replace page 74 of the Technical Specifications with the attached revised page 74. The changed area on the revised page is shown by a marginal line.

3.3 LIMITING CONDITION FOR OPERATION

3. The control rod drive housing support system shall be in place during reactor power operation and when the reactor coolant system is pressurized above atmospheric pressure with fuel in the reactor vessel, unless all control rods are fully inserted and Specification 3.3.A.1 is met.

   a. Control rod withdrawal sequences shall be established so that maximum reactivity that could be added by dropout of any increment of any one control blade would not make the core more than 0.013 Δk supercritical.

   b. Whenever the reactor is in the Startup/Hot Standby or Run mode below 10% rated thermal power, the Rod Worth Minimizer shall be operable. A second operator or qualified technical person may be used as a substitute for an inoperable Rod Worth Minimizer which fails after withdrawal of at least 12 control rods to the fully withdrawn position. The Rod Worth Minimizer may also be bypassed for low power physics testing to demonstrate the shutdown margin requirements of Specification 3.3.A. if a nuclear engineer is present and verifies the step-by-step rod movements of the test procedure.

28

4. Control rods shall not be withdrawn for startup or refueling unless at least two source range channels have an observed count rate equal to or greater than three counts per second and these SRMs are fully inserted.

4.3 SURVEILLANCE REQUIREMENT

3. The correctness of the control rod withdrawal sequence input to the RWM computer shall be verified after loading the sequence.

   Prior to the start of control rod withdrawal towards criticality, the capability of the Rod Worth Minimizer to properly fulfill its function shall be verified by the following checks:

   a. The RWM computer on line diagnostic test shall be successfully performed.

   b. Proper annunciation of the selection error of one out-of-sequence control rod shall be verified.

   c. The rod block function of the RWM shall be verified by withdrawing the first rod as an out-of-sequence control rod no more than to the block point.

4. Prior to control rod withdrawal for startup or during refueling verify that at least two source range channels have an observed count rate of at least three counts per second.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 16 AND 13 TO FACILITY OPERATING LICENSES NOS. DPR-29 AND DPR-30

(CHANGE NO. 28 TO THE TECHNICAL SPECIFICATIONS)

COMMONWEALTH EDISON COMPANY AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

QUAD CITIES STATION UNITS 1 AND 2

DOCKET NOS. 50-254 AND 50-265

INTRODUCTION

By application dated April 3, 1975, Commonwealth Edison (CE) requested that the Facility License Nos. DPR-29 and DPR-30 for Quad Cities Units 1 and 2 be amended to modify the limiting conditions of operations for the Rod Worth Minimizer (RWM). The proposed amendment would allow bypassing the RWM for low power physics tests to demonstrate shutdown margins.

EVALUATION

The current Technical Specifications for Quad Cities Units 1 and 2 require that the RWM be operable whenever the reactor is in the Startup/Hot Standby or Run Mode below ten percent of rated power. This specification was issued on March 25, 1974 (Change No. 13 to the licenses) to upgrade the operability requirements for the RWM. It was not recognized at the time of issuance that this requirement would preclude the performance of the adjacent rod critical checks of shutdown margin. Demonstration of shutdown margin is required by Technical Specification 4.3.A.1 following a refueling outage.

The operability of the RWM is required during reactor startups and shutdowns to prevent the withdrawal of a control rod which, in the event of a rod drop accident, could cause the reactor to be greater than 1.3% Δk supercritical. However, the RWM is not designed for nor was it intended for use during the performance of shutdown margin tests.

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Technical Specification 3.3.A.1. requires that the core loading be limited such that the core will be subcritical with the strongest control rod in its full-out position and all other rods fully inserted. Technical Specification 4.3.A.1. requires that a demonstration be performed, following a refueling outage, to show that the core is subcritical, with the strongest control rod withdrawn, by a margin of 0.25 percent Δk at any time in the core life. The basis for Technical Specification 3.3.A.1. states that the required subcritical margin is demonstrated by full withdrawal of the strongest control rod and partial withdrawal of an adjacent control rod to a position calculated to insert at least R + 0.25 percent Δk in reactivity. The value of R is the change in calculated reactivity between the beginning of the fuel cycle and the point in the fuel cycle where the core reactivity is the largest.

To provide assurance that a control rod drop accident of greater consequences or higher probability than that previously analyzed will not occur during the shutdown margin checks, CE has stated in their request that the following procedures will be used for the performance of these checks.

1. The coupling of the control rod to the control rod drive will be checked prior to performing the checks for all control rods to be used during the subcritical margin checks.

2. The high worth rod to be tested will be withdrawn to its full-out position with all other rods inserted.

3. The coupling of the control rod to the control rod drive for the high worth control rod will be checked by observing the control rod drive over-travel light. This light cannot be actuated unless the control rod is uncoupled from the control rod drive.

4. The high worth control rod will be reinserted to the full-in position.

5. The control rod adjacent to the high worth control rod will be withdrawn to a position which is calculated to be insufficient to cause criticality with the highest worth rod also withdrawn.

6. The highest worth rod will be withdrawn to its full-out position and coupling rechecked.

7. The above steps will be repeated until the rod adjacent to the high worth rod is withdrawn to the required increment.

During the rod movement sequence the count rate on the source range monitor will be monitored continously. Confirmation that the control rod is moving with the control rod drive would be obtained by observing the change in count rate in those instances where the source range monitor location and the approach to criticality would cause a change in source range monitor count rate.

Control rod withdrawal increments which exhibit no change in count rate will be restricted such that, even in the remote event of a rod drop event, the reactivity insertion would be insufficient to cause the reactor to be critical. This assures with a large margin, that a rod drop event would not cause an excursion more severe than that analyzed for reactor startup with the RWM in service.

To provide added assurance that the procedural steps are followed and that the results are interpreted properly, CE has proposed to add a requirement to the Technical Specifications that would require a nuclear engineer to be present during the shutdown margin checks to verify that the test procedure is followed.

Therefore, considering the low likelihood of the events which must occur before a rod drop accident can occur, the additional measures taken to assure that control rods are coupled to the control rod drives, the restrictions to control rod withdrawal increments, the monitoring of rod movement using the source range monitors, the required use of a nuclear engineer to verify that the test procedure is being followed, the fact that these tests are currently required and were only inadvertently precluded by the change to the RWM operability requirements, we conclude that the procedural controls necessary to perform the shutdown margin tests are an adequate substitute for the RWM.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 7, 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

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

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 16 and 13 to Facility Operating License Nos. DPR-29 and DPR-30 (respectively) issued to the 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 Units 1 and 2 located in Rock Island County, Illinois. These amendments are effective as of their date of issuance.

The amendments incorporate a provision in the Technical Specifications which allows bypassing the Rod Worth Minimizer for performing low power physics tests to demonstrate shutdown margins, in accordance with the licensee's request dated April 3, 1975.

The application for these amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments is not required since these amendments do not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for these amendments dated April 3, 1975, (2) Amendment Nos. 16 and 13 to License Nos. DPR-29 and DPR-30, with Change No. 28, and (3) the Commission's concurrently issued related Safety Evaluation. 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, at 504 - 17th Street in Moline, Illinois 60265. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this 7th day of April, 1975.

FOR THE NUCLEAR REGULATORY COMMISSION

Dennis L. Ziemann

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