DISTRIBUTION
Docket (2)
NRC PDR (2)
Local PDR
ORB #2 Reading
VStello
KRGoller/TJCarter
RMDiggs
PWO'Connor
MGrotenhuis
MHFletcher
OELD – Mulkey
OI&E (5)
BJones (8)
BScharf (10)
JMMcGough
DEisenhut
ACRS (16)
OPA (CMiles)
DRoss
TBAbernathy, DTIE
JRBuchanan, NSIC

Docket Nos. 50-254
50-265

JAN 27 1977

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

Gentlemen:

In response to your request dated March 2, 1976, the Commission has issued the enclosed Amendment Nos. 37 and 35 to Facility Operating License Nos. DPR-29 and DPR-30 (respectively) for the Quad Cities Nuclear Power Station Unit Nos. 1 and 2.

The amendments consist of Technical Specification changes which govern the operation and surveillance of your modified crane handling system as described in your letters dated November 8, 1974, June 10 and December 8, 1975, and February 9, March 2 and March 29, 1976. Modifications and additions to the proposed Technical Specifications were necessary to meet our requirements. These changes were discussed with your staff and have been made.

These amendments conclude our review of the fuel cask drop accident analysis for Quad Cities Nuclear Power Station Unit Nos. 1 and 2.

A copy of the related Safety Evaluation Report and Notice of Issuance are also enclosed.

Sincerely,

Original Signed by:
Dennis L. Ziemann

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

Enclosures:
1. Amendment Nos. 37 and 35 to License Nos. DPR-29 and DPR-30
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

OFFICE		DOR:ORB #2	DOR:ORB #2	DOR:ORB #2	OELD	DOR:ORB #2
SURNAME		MHFletcher:ah	RMDiggs	PWO'Connor	M. Mulkey	DLZiemann
DATE		1/6/77	1/6/77	1/6/77	1/27/77	1/27/77

NRC FORM 318 (9-76) NRCM 0240

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

JAN 27 1977

cc w/enclosures:
Mr. Charles Whitmore
President and Chairman
Iowa-Illinois Gas and
Electric Company
206 East Second Avenue
Davenport, Iowa 52801

Mr. John W. Rowe
Isham, Lincoln & Beale
Counselors at Law
One First National Plaza, 42nd Floor
Chicago, Illinois 60603

Anthony Z. Roisman, Esquire
Roisman, Kessler and Cashdan
1025 15th Street, N. W., 5th Floor
Washington, D. C. 20005

Moline Public Library
504 - 17th Street
Moline, Illinois 61265

Chief, Energy Systems Analyses
Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Federal Activities Branch
Region V Office
ATTN: EIS COORDINATOR
230 South Dearborn Street
Chicago, Illinois 60604

Mr. Marcel DeJaegher, Chairman
Rock Island County Board
of Supervisors
Rock Island County Court House
Rock Island, Illinois 61201

cc w/enclosures:
Department of Public Health
ATTN: Chief, Division of
Radiological Health
535 West Jefferson
Springfield, Illinois 62706
(Note: CECo filings forwarded
w/Ltr. 6/3/76 in Dockets
50-237 and 50-249)

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

QUAD CITIES NULCEAR POWER STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 37
License No. DPR-29

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated March 2, 1976, and related filings dated November 8, 1974, June 10 and December 8, 1975 and February 9 and March 29, 1976, comply 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.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment becomes effective 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: JAN 27 1977

OFFICE ➤						
SURNAME ➤						
DATE ➤						

ATTACHMENT TO LICENSE AMENDMENT NO. 27

FACILITY OPERATING LICENSE NO. DPR-29

DOCKET NO. 50-254

Replace existing pages iii, 3.10/4.10-3 and 3.10/4.10-5 of the Technical Specifications contained in Appendix A with the attached revised pages bearing the same numbers and add page 3.10/4.10-3a. The changed areas on the new and revised pages are shown by a marginal line.

OFFICE ➔						
SURNAME ➔						
DATE ➔						

TABLE OF CONTENTS (Cont'd)

	Page
3.9/4.9 AUXILIARY ELECTRICAL SYSTEMS	3.9/4.9-1
A. Normal and Emergency A-C Auxiliary Power	3.9/4.9-1
B. Station Batteries	3.9/4.9-2
C. Electric Power Availability	3.9/4.9-2
D. Diesel Fuel	3.9/4.9-3
E. Diesel-Generator Operability	3.9/4.9-3
3.9 Limiting Conditions for Operation Bases	3.9/4.9-5
4.9 Surveillance Requirements Bases	3.9/4.9-6
3.10/4.10 REFUELING	3.10/4.10-1
A. Refueling Interlocks	3.10/4.10-1
B. Core Monitoring	3.10/4.10-2
C. Fuel Storage Pool Water Level	3.10/4.10-2
D. Control Rod and Control Rod Drive Maintenance	3.10/4.10-2
E. Extended Core Maintenance	3.10/4.10-3
F. Spent Fuel Cask Handling	3.10/4.10-3
3.10 Limiting Conditions for Operation Bases	3.10/4.10-4
4.10 Surveillance Requirements Bases	3.10/4.10-6
3.11/4.11 HIGH ENERGY PIPING INTEGRITY (Outside Containment)	3.11/4.11-1
3.11/4.11 Bases	3.11/4.11-2
5.0 DESIGN FEATURES	5.0-1
6.0 ADMINISTRATIVE CONTROLS	6.1-1
6.1 Organization, Review, Investigation, and Audit	6.1-1
6.2 Plant Operating Procedures	6.2-1
6.3 Action to be Taken in the Event of a Reportable Occurrence in Plant Operation	6.3-1
6.4 Action to be Taken in the Event a Safety Limit is Exceeded	6.4-1
6.5 Plant Operating Records	6.5-1
6.6 Reporting Requirements	6.6-1

gin to criticality demonstrated.

3. SRM's shall be operable (a) in each core quadrant containing a control rod on which maintenance is being performed, and (b) in a quadrant adjacent to one of the quadrants specified in Specification 3.10.D.3.(a) above. Requirements for an SRM to be considered operable are given in Specification 3.10.B.

E. **Extended Core Maintenance**

More than two control rods may be withdrawn from the reactor core provided the following conditions are satisfied:

1. The reactor mode switch shall be locked in the Refuel position. The refueling interlock which prevents more than one control rod from being withdrawn may be bypassed on a withdrawn control rod after the fuel assemblies in the cell containing (controlled by) that control rod have been removed from the reactor core. All other refueling interlocks shall be operable.

2. SRM's shall be operable in the core quadrant where fuel or control rods are being moved and in an adjacent quadrant. The requirements for an SRM to be considered operable are given in Specification 3.10.B.

F. Spent Fuel Cask Handling

1. Fuel cask handling above the 623' level of the Reactor Building will be done with the reactor building crane in the RESTRICTED MODE only, except as specified in 3.10.F.2.

2. Fuel cask handling in other than the RESTRICTED MODE will be permitted in emergency or equipment failure situations only to the extent necessary to get the cask to the closest acceptable stable location.

be met with the strongest control rod remaining in service during the maintenance period fully withdrawn.

E. **Extended Core Maintenance**

Prior to control rod withdrawal for extended core maintenance, that control rod's control cell shall be cerified to contain no fuel assemblies.

F. Spent Fuel Cask Handling

1. Prior to fuel cask handling operations, the redundant crane including the rope, hooks, slings, shackles and other operating mechanisms will be inspected.

   The rope will be replaced if any of the following conditions exist:

   a. Twelve (12) randomly distributed broken wires in one lay or four (4) broken wires in one strand of one rope lay.

   b. Wear of one-third the original diameter of outside individual wire.

   c. Kinking, crushing, or any other damage resulting in distortion of the rope.

3. Operation with a failed controlled area limit switch is permissible for 48 hours providing an operator is on the refueling floor to assure the crane is operated within the restricted zone painted on the floor.

d. Evidence of any type of heat damage.

e. Reductions from nominal diameter of more than 1/16 inch for a rope diameter from 7/8" to 1 1/4" inclusive.

2. Prior to operations in the RESTRICTED MODE

a. the controlled area limit switches will be tested;

b. the "two-block" limit switches will be tested;

c. the "inching hoist" controls will be tested.

3. The empty spent fuel cask will be lifted free of all support by a maximum of 1 foot and left hanging for 5 minutes prior to any series of fuel cask handling operations.

core before the interlock can be bypassed ensures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod essentially provides reactivity control for the fuel assemblies in the cell associated with that control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

The operation of the redundant crane in the Restricted Mode during fuel cask handling operations assures that the cask remains within the controlled area once it has been removed from its transport vehicle (i.e., once it is above the 623' elevation). Handling of the cask on the Refueling Floor in the Unrestricted Mode is allowed only in the case of equipment failures or emergency conditions when the cask is already suspended. The Unrestricted Mode of operation is allowed only to the extent necessary to get the cask to a suitable stationary position so the required repairs can be made. Operation with a failed controlled area microswitch will be allowed for a 48-hour period providing an Operator is on the floor in addition to the crane operator to assure that the cask handling is limited to the controlled area as marked on the floor. This will allow adequate time to make repairs but still will not restrict cask handling operations unduly.

The Surveillance Requirements specified assure that the redundant crane is adequately inspected in accordance with the accepted ANSI Standard (B.30.2.0) and manufacturer's recommendations to determine that the equipment is in satisfactory condition. The testing of the controlled area limit switches assures that the crane operation will be limited to the designated area in the Restricted Mode of operation. The test of the "two-block" limit switch assures the power to the hoisting motor will be interrupted before an actual "two-blocking" incident can occur. The test of the inching hoist assures that this mode of load control is available when required.

Requiring the lifting and holding of the cask for 5 minutes during the initial lift of each series of cask handling operations puts a load test on the entire crane lifting mechanism as well as the braking system. Performing this test when the cask is being lifted initially from the cask car assures that the system is operable prior to lifting the load to an excessive height.

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-265

QUAD CITIES NULCEAR POWER STATION UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 35
License No. DPR-30

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated March 2, 1976, and related filings dated November 8, 1974, June 10 and December 8, 1975 and February 9 and March 29, 1976, comply 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.

OFFICE ➔						
SURNAME ➔						
DATE ➔						

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment becomes effective 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: JAN 27 1977

OFFICE ➤						
SURNAME ➤						
DATE ➤						

ATTACHMENT TO LICENSE AMENDMENT NO. 35

FACILITY OPERATING LICENSE NO. DPR-30

DOCKET NO. 50-265

Replace existing pages iii, 3.10/4.10-3 and 3.10/4.10-5 of the Technical Specifications contained in Appendix A with the attached revised pages bearing the same numbers and add page 3.10/4.10-3a. The changed areas on the new and revised pages are shown by a marginal line.

OFFICE ➔						
SURNAME ➔						
DATE ➔						

TABLE OF CONTENTS (Cont'd)

	Page
3.9/4.9 AUXILIARY ELECTRICAL SYSTEMS	3.9/4.9-1
A. Normal and Emergency A-C Auxiliary Power	3.9/4.9-1
B. Station Batteries	3.9/4.9-2
C. Electric Power Availability	3.9/4.9-2
D. Diesel Fuel	3.9/4.9-3
E. Diesel-Generator Operability	3.9/4.9-3
3.9 Limiting Conditions for Operation Bases	3.9/4.9-5
4.9 Surveillance Requirements Bases	3.9/4.9-6
3.10/4.10 REFUELING	3.10/4.10-1
A. Refueling Interlocks	3.10/4.10-1
B. Core Monitoring	3.10/4.10-2
C. Fuel Storage Pool Water Level	3.10/4.10-2
D. Control Rod and Control Rod Drive Maintenance	3.10/4.10-2
E. Extended Core Maintenance	3.10/4.10-3
F. Spent Fuel Cask Handling	3.10/4.10-3
3.10 Limiting Conditions for Operation Bases	3.10/4.10-4
4.10 Surveillance Requirements Bases	3.10/4.10-6
3.11/4.11 HIGH ENERGY PIPING INTEGRITY (Outside Containment)	3.11/4.11-1
3.11/4.11 Bases	3.11/4.11-2
5.0 DESIGN FEATURES	5.0-1
6.0 ADMINISTRATIVE CONTROLS	6.1-1
6.1 Organization, Review, Investigation, and Audit	6.1-1
6.2 Plant Operating Procedures	6.2-1
6.3 Action to be Taken in the Event of a Reportable Occurrence in Plant Operation	6.3-1
6.4 Action to be Taken in the Event a Safety Limit is Exceeded	6.4-1
6.5 Plant Operating Records	6.5-1
6.6 Reporting Requirements	6.6-1

gin to criticality demonstrated.

3. SRM's shall be operable (a) in each core quadrant containing a control rod on which maintenance is being performed, and (b) in a quadrant adjacent to one of the quadrants specified in Specification 3.10.D.3.(a) above. Requirements for an SRM to be considered operable are given in Specification 3.10.B.

E. **Extended Core Maintenance**

More than two control rods may be withdrawn from the reactor core provided the following conditions are satisfied:

1. The reactor mode switch shall be locked in the Refuel position. The refueling interlock which prevents more than one control rod from being withdrawn may be bypassed on a withdrawn control rod after the fuel assemblies in the cell containing (controlled by) that control rod have been removed from the reactor core. All other refueling interlocks shall be operable.

2. SRM's shall be operable in the core quadrant where fuel or control rods are being moved and in an adjacent quadrant. The requirements for an SRM to be considered operable are given in Specification 3.10.B.

F. Spent Fuel Cask Handling

1. Fuel cask handling above the 623' level of the Reactor Building will be done with the reactor building crane in the RESTRICTED MODE only, except as specified in 3.10.F.2.

2. Fuel cask handling in other than the RESTRICTED MODE will be permitted in emergency or equipment failure situations only to the extent necessary to get the cask to the closest acceptable stable location.

be met with the strongest control rod remaining in service during the maintenance period fully withdrawn.

E. **Extended Core Maintenance**

Prior to control rod withdrawal for extended core maintenance, that control rod's control cell shall be cerified to contain no fuel assemblies.

F. Spent Fuel Cask Handling

1. Prior to fuel cask handling operations, the redundant crane including the rope, hooks, slings, shackles and other operating mechanisms will be inspected.

   The rope will be replaced if any of the following conditions exist:

   a. Twelve (12) randomly distributed broken wires in one lay or four (4) broken wires in one strand of one rope lay.

   b. Wear of one-third the original diameter of outside individual wire.

   c. Kinking, crushing, or any other damage resulting in distortion of the rope.

3. Operation with a failed controlled area limit switch is permissible for 48 hours providing an operator is on the refueling floor to assure the crane is operated within the restricted zone painted on the floor.

d. Evidence of any type of heat damage.

e. Reductions from nominal diameter of more than 1/16 inch for a rope diameter from 7/8" to 1 1/4" inclusive.

2. Prior to operations in the RESTRICTED MODE

a. the controlled area limit switches will be tested;

b. the "two-block" limit switches will be tested;

c. the "inching hoist" controls will be tested.

3. The empty spent fuel cask will be lifted free of all support by a maximum of 1 foot and left hanging for 5 minutes prior to any series of fuel cask handling operations.

core before the interlock can be bypassed ensures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod essentially provides reactivity control for the fuel assemblies in the cell associated with that control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

The operation of the redundant crane in the Restricted Mode during fuel cask handling operations assures that the cask remains within the controlled area once it has been removed from its transport vehicle (i.e., once it is above the 623' elevation). Handling of the cask on the Refueling Floor in the Unrestricted Mode is allowed only in the case of equipment failures or emergency conditions when the cask is already suspended. The Unrestricted Mode of operation is allowed only to the extent necessary to get the cask to a suitable stationary position so the required repairs can be made. Operation with a failed controlled area microswitch will be allowed for a 48-hour period providing an Operator is on the floor in addition to the crane operator to assure that the cask handling is limited to the controlled area as marked on the floor. This will allow adequate time to make repairs but still will not restrict cask handling operations unduly.

The Surveillance Requirements specified assure that the redundant crane is adequately inspected in accordance with the accepted ANSI Standard (B.30.2.0) and manufacturer's recommendations to determine that the equipment is in satisfactory condition. The testing of the controlled area limit switches assures that the crane operation will be limited to the designated area in the Restricted Mode of operation. The test of the "two-block" limit switch assures the power to the hoisting motor will be interrupted before an actual "two-blocking" incident can occur. The test of the inching hoist assures that this mode of load control is available when required.

Requiring the lifting and holding of the cask for 5 minutes during the initial lift of each series of cask handling operations puts a load test on the entire crane lifting mechanism as well as the braking system. Performing this test when the cask is being lifted initially from the cask car assures that the system is operable prior to lifting the load to an excessive height.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING APPROVAL TO FACILITY MODIFICATIONS TO REDUCE THE PROBABILITY OF A FUEL CASK DROP ACCIDENT TO AN ACCEPTABLY LOW LEVEL

AND

AMENDMENT NOS. 37 AND 35 TO LICENSE NOS. DPR-29 AND DPR-30

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

QUAD CITIES NUCLEAR POWER STATION UNIT NOS. 1 AND 2

DOCKET NOS. 50-254 AND 50-265

INTRODUCTION

By letter dated February 4, 1974, we requested Commonwealth Edison Company (CECo) to evaluate the potential for damage to plant structures, systems, and components important to safety in the event of a fuel shipping cask drop caused by failure of the crane systems or handling devices at Quad Cities Station Unit Nos. 1 and 2. In conjunction with the analysis, we requested CECo to provide plans to revise the design of plant facilities or equipment as required. CECo, by letter dated November 8, 1974, submitted Dresden Special Report No. 41 and Quad Cities Special Report No. 16, "Reactor Building Crane and Cask Yoke Assembly Modifications". Special Report No. 16 describes modifications to the crane handling system for Quad Cities Station Unit Nos. 1 and 2 to preclude dropping a spent fuel shipping cask by preventing all postulated single-component failures.

BACKGROUND

Overhead handling systems are used for moving heavy items at nuclear power plants. The handling of heavy loads such as a spent fuel cask raises the possibility of damage to the load and to safety-related equipment or structures under and adjacent to the path of travel should the handling system malfunction. Overhead handling systems intended to provide single failure-proof handling of loads should be designed so that a single failure or malfunction will not result in dropping or losing control of the heaviest load to be handled.

Since the crane industry has not yet developed codes or standards that adequately cover the design, operation, and testing for a single failure-proof crane, the NRC staff has developed a position statement to provide a consistent basis for reviewing overhead handling systems. This statement is Auxiliary and Power Conversion Systems Branch Technical Position 9-1 (BTP APCSB 9-1). Review of the Quad Cities Unit Nos. 1 and 2 overhead crane handling system was based on BTP APCSB 9-1, a copy of which was sent to CECo as enclosure B of our request for additional information dated October 16, 1975.

SYSTEM DESCRIPTION

The overhead crane handling system for Quad Cities Unit Nos. 1 and 2 consists of an overhead, bridge type crane, spent fuel cask lifting devices, and controls. The overhead crane handling system is used during plant operation for lifting and transporting the spent fuel shipping cask between the spent fuel pool and the cask decontamination/shipping area. The overhead crane is located indoors in a controlled environment of about 70°F, and has a main hoist rated at 125 tons. The crane hoist system consists of a dual load path through the hoist gear train, the reeving system, and the hoist load block along with restraints at critical points to provide load retention and minimization of uncontrolled motions of the load in the event of failure of any single hoist component. Redundancy has also been designed into the hoist and trolley brakes, the spent fuel cask lifting devices, and the crane control components. Within the dual load path, the design criteria are such that all dual elements comply with the Crane Manufacturers Association of America Specification #70 for allowable stresses except for the hoisting rope which is governed by more stringent job specification criteria. All single element components, within the load path, have been designed to a minimum safety factor of 7.5 based on the ultimate strength of the material.

All analyses performed relative to the overhead crane handling system loads have been based on the National Lead 10/24 spent fuel shipping cask which weighs 100 tons. If larger casks are used, additional analyses will be required to assure safety margins are maintained.

The licensee has developed administrative controls and installed limit switches to restrict the path of travel of the crane and fuel cask to a specific controlled area. The controls are intended to assure that a controlled path is followed in moving a cask between the shipping area and the spent fuel pool. Requirements for portions of these controls

will be incorporated into the Quad Cities Unit Nos. 1 and 2 Technical Specifications. The revised specifications would assure that the electrical interlocks are operable and in operation prior to cask handling, would provide limitations on crane operation with a failed controlled area limit switch, and would permit operation without controlled area interlocks in an emergency to move the cask to the closest acceptable stable location.

EVALUATION

Based on our review of data provided by the licensee, we have concluded that the integrated design of crane, controls, and cask lifting devices meets the intent of BTP APCSB 9-1 as regards single failure criteria except in the specific areas of the crane reeving system, and protection against "two blocking". "Two blocking" is an inadvertently continued lift which brings the load and block assembly into physical contact, thereby preventing further movement and creating shock loads on the rope and reeving assembly.

The crane reeving system, which was designed and constructed prior to the development of the NRC Branch Technical Position, does not meet the recommended criteria for wire rope safety factors and fleet angles. The purpose of these criteria is to assure a design which minimizes wire rope stress and wear and thereby provides maximum assurance of crane safety under all operating and maintenance conditions. Because the crane reeving system does not meet these recommended criteria, there is a possibility of an accelerated rate of wire rope wear occurring. Accordingly, to compensate in these design areas, the licensee, by letter dated March 2, 1976, has proposed to incorporate into the Technical Specifications a specific program of wire rope visual inspection and replacement, the purpose of which would be to assure that the entire length of the wire rope will be maintained as close as practicable to original design safety factors at all times. This inspection and replacement program provides an equivalent level of protection to the methods suggested in our wire rope safety and crane fleet angle criteria and will assure that accelerated wire rope wear will be detected before crane use and satisfies our concerns, and on this basis we conclude that the crane reeving system is acceptable.

The crane control system does not provide adequate protection against "two blocking" in the event of a fused contactor in the main hoist control circuitry. However, the licensee has agreed to provide and install a mechanically operated power limit switch in the main hoist

motor power circuit on the load side of all hoist motor power circuit controls. This power limit switch will interrupt power to the main hoist motor and cause the holding brakes to set prior to "two blocking" in the event of a fused contactor. We have concluded that this proposed modification will provide adequate protection against "two blocking", and the control system would be acceptable.

We have reviewed the administrative procedures, proposed Technical Specifications, and electrical interlocks for limiting the crane and cask travel path as detailed in CECo's submittals. Some modification of the proposed Technical Specifications was required to meet our requirements. These changes were discussed with CECo representatives. We conclude that adequate provisions have been made to assure that the crane and cask could not travel outside the controlled area and that the control system for this purpose is acceptable. We also find that the new Technical Specifications 3.10.F.2 and 3.10.F.3 relating to moving the cask to a safe position in the event of equipment failure and operation for up to 48 hours with a crane operator substituting for a failed controlled area limit switch provide an equivalent level of protection to the basic specification and are acceptable.

Based on our evaluation of the data provided and the commitments made by CECo in the areas of wire rope surveillance and prevention of "two blocking", we conclude that the overhead crane handling system and proposed spent fuel cask handling Technical Specifications meet our requirements and are acceptable for handling spent fuel casks weighing up to 100 tons.

ENVIRONMENTAL CONSIDERATIONS

We have determined that the amendments do not involve 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 impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do

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 Comission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: January 27, 1977

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

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 37 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 Unit Nos. 1 and 2 (the facilities) located in Rock Island County, Illinois. These amendments are effective 30 days after the date of issuance.

The amendments incorporate into the Technical Specifications provisions for spent fuel cask handling and approves the overhead crane handling system for Quad Cities Unit Nos. 1 and 2.

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 was not required since these amendments do not involve a significant hazards consideration.

OFFICE➤						
SURNAME➤						
DATE➤						

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 impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for these amendments dated March 2, 1976, and related filings dated November 8, 1974, June 10, 1975, December 8, 1975, February 9, 1976 and March 29, 1976, (2) Amendment Nos. 9 and 6 to License Nos. DPR-29 and DPR-30, and (3) the Commission's concurrently issued 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 Operating Reactors.

Dated at Bethesda, Maryland, this 27th day of January, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

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

OFFICE ➔						
SURNAME ➔						
DATE ➔						

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

January 14, 1977

Comments on License Amendment re Crane Handling System for Quad Cities 1 & 2

(1) My primary concern is with the inspection program apparently designed to compensate for a failure of the system to meet certain engineering criteria (as to wire rope and fleet angles) contained in BTP ARCSB 9-1. On that subject, I have the following concerns.

A) Some more detail needs to be provided to make clear the scope of each inspection. While it is clear that they are to occur before each use and that certain specific flaws are to be responded to, nowhere are we told that, for example, the entire length of the wire rope will be inspected. By whom? Using sight or some technical assist?

B) An explanation should be provided of how the QC crane system fails to meet the criteria of BTP APCSB 9-1, the extent to which it falls short, and the likely effect of this failure. If, for example, the criteria are more rigorous than they need be, that could be explained as well.

C) An explanation should be provided of how and why the inspection program "satisfies our concerns" and "is acceptable" as an alternative to satisfying the criteria.

D) Some explanation of why other alternatives are undesirable might be useful. Why can't the QC system be altered to fit the criteria? Why shouldn't it be replaced with a system which does so?

(2) At page 4 of the Safety Evaluation, end of first full paragraph, there should be a brief explanation of why the modifications for emergency handling and operating with a failed switch are acceptable.

(3) At page 4 of the SE, line 6 of first full paragraph, the phrase. "provisions have been provided" should probably be changed to something like "provisions have been made."

(4) I am in agreement that no pre-notice is required simply because the change is not in a direction which increases safety concerns. However, if this represented a relaxation from previously adhered-to engineering criteria, the situation might be quite different.

Marcia E. Mulkey

Marcia E. Mulkey
Attorney, OELD

Please leave comments attached.