

REGULATION DIVISION COPY

Docket Nos. 50-237 SEPTEMBER 8 1980  
✓50-249  
50-254  
and 50-265

Mr. D. Louis Peoples  
Director of Nuclear Licensing  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

Dear Mr. Peoples:

Distribution

- ✓ Docket
- ORB #2
- NRR Reading
- Local PDR
- NRC PDR
- HDenton
- DEisenhut
- RPurple
- TNovak
- RTedesco
- GLainas
- JOlshinski
- SNorris
- RBevan
- Tippolito
- OELD
- OI&E (5)
- BJones (16)

- BScharf (10)
- JWetmore
- ACRS (16)
- OPA (CMiles)
- RDiggs
- JHeltemes, AEOD
- Nsic
- TERA
- HSmith
- PO'Connor

The Commission has issued the enclosed Amendment Nos. 49, 44 58, and 53 for Operating License Nos. DPR-19, DPR-25, DPR-29 and DPR-30 for Dresden Units 2 and 3 and Quad Cities Units 1 and 2, respectively. These amendments are in response to your letter dated May 15, 1980 as supplemented September 3, 1980.

The amendments revise the Technical Specifications to allow the count rate on the Source Range Monitor (SRM) channels to go below three (3) counts per second when there are two or less fuel assemblies in a quadrant and they are positioned adjacent to the SRM in that quadrant.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original Signed by  
T. A. Ippolito

Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing

Enclosures:

1. Amendment Nos.  
and
2. Safety Evaluation
3. Notice

cc w/enclosures:  
See next page

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OFFICE	ORB #2	ORB #2	ORB #5	AD:OR	OELD	ORB #2
SURNAME	SNorris	RBevan:mjf	PO'Connor/ DCrutchfield	TNovak		Tippolito
DATE	9/ /80	9/ /80	9/ /80	9/ /80	9/ /80	9/ /80

Mr. D. Louis Peoples

- 2 -

September 8, 1980

cc:

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

Mr. B. B. Stephenson  
Plant Superintendent  
Dresden Nuclear Power Station  
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Morris, Illinois 60450

Morris Public Library  
604 Liberty Street  
Morris, Illinois 60451

Illinois Department of Public Health  
ATTN: Chief, Division of Nuclear  
Safety  
535 West Jefferson  
Springfield, Illinois 62761

Mr. William Waters  
Chairman, Board of Supervisors  
of Grundy County  
Grundy County Courthouse  
Morris, Illinois 60450

Director, Technical Assessment Division  
Office of Radiation Programs (AW-459)  
US EPA  
Crystal Mall #2  
Arlington, Virginia 20460

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

Susan N. Sekuler  
Assistant Attorney General  
Environmental Control Division  
188 W. Randolph Street  
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U. S. Nuclear Regulatory Commission  
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RR #1  
Morris, Illinois 60450

Mr. D. R. Stichnoth, President  
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Mr. Nick Kalivianakas  
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Mr. N. Chrissotimos, Inspector  
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Bettendorf, Iowa 52722

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

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



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN STATION UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 49  
License No. DPR-19

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated May 15, 1980, as supplemented September 3, 1980, 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 Provisional Operating License No. DPR-19 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.49, 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

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 8, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 49

PROVISIONAL OPERATING LICENSE NO. DPR-19

DOCKET NO. 50-237

Replace the attached pages of the Appendix "A" Technical Specifications with the attached revised pages.

Remove

151  
152  
155

Replace

151  
152  
155

3.10 LIMITING CONDITION FOR OPERATION	4.10 SURVEILLANCE REQUIREMENT
<p><b>3.10 REFUELING</b></p> <p><u>Applicability:</u> Applies to fuel handling and core reactivity limitations.</p> <p><u>Objective:</u> To assure core reactivity is within capability of the control rods and to prevent criticality during refueling.</p> <p><u>Specification:</u></p> <p><b>A. Refueling Interlocks</b></p> <p>The reactor mode switch shall be locked in the "Refuel" position during core alterations and the refueling interlocks shall be operable except as specified in Specifications 3.10.D and 3.10.E.</p> <p><b>B. Core Monitoring</b></p> <p>During core alterations two SRM's shall be operable, one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant. For an SRM to be considered operable, the following conditions shall be satisfied:</p>	<p><b>4.10 REFUELING</b></p> <p><u>Applicability:</u> Applies to the periodic testing of those interlocks and instruments used during refueling.</p> <p><u>Objective:</u> To verify the operability of instrumentation and interlocks used in refueling.</p> <p><u>Specification:</u></p> <p><b>A. Refueling Interlocks</b></p> <p>Prior to any fuel handling, with the head off the reactor vessel, the refueling interlocks shall be functionally tested. They shall also be tested at weekly intervals thereafter until no longer required and following any repair work associated with the interlocks.</p> <p><b>B. Core Monitoring</b></p> <p>Prior to making any alterations to the core the SRM's shall be functionally tested and checked for neutron response. Thereafter, the SRM's will be checked daily for response, except when the conditions of 3.10.B.2.a and 3.10.B.2.b are met.</p>

**3.10 LIMITING CONDITION FOR OPERATION**

**4.10 SURVEILLANCE REQUIREMENT**

1. The SRM shall be inserted to the normal operating level. (Use of special moveable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors are permissible as long as the detector is connected into the normal SRM circuit.)

2. The SRM or dunking type detector shall have a minimum of 3 cps with all rods fully inserted in the core except when both of the following conditions are fulfilled:

- a) No more than two fuel assemblies are present in the core quadrant associated with the SRM.
- b) While in core, these fuel assemblies are in locations adjacent to the SRM.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool water level shall be maintained at a level of 33 feet.

**D. Control Rod and Control Rod Drive Maintenance**

A maximum of two non-adjacent control rods separated by more than two control cells in any direction, may be withdrawn from the core for the purpose of performing control rod and/or control rod drive maintenance provided the following conditions are satisfied:

- 1. The reactor mode switch shall be locked in the "re-fuel" position. The re-fueling interlock which prevents more than one control rod from being withdrawn may be bypassed for one of the control rods on which maintenance is being performed. All other re-fueling interlocks shall be operable.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool level shall be recorded daily.

**D. Control Rod Drive and Control Rod Drive Maintenance**

- 1. This surveillance requirement is the same as given in 4.10.A.

Bases:

DPR-19

**A. Refueling Interlocks**

During refueling operations, the reactivity potential of the core is being altered. It is necessary to require certain interlocks and restrict certain refueling procedures such that there is assurance that inadvertent criticality does not occur.

To minimize the possibility of loading fuel into a cell containing no control rod, it is required that all control rods are fully inserted when fuel is being loaded into the reactor core. This requirement assures that during refueling the refueling interlocks, as designed, will prevent inadvertent criticality. The core reactivity limitation of Specifications 3.2 limits the core alterations to assure that the resulting core loading can be controlled with the reactivity control system and interlocks at any time during shutdown or the following operating cycle.

Addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the "Refuel" position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. Likewise, if the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

For a new core the dropping of a fuel assembly into a vacant fuel location adjacent to a withdrawn control rod does not result in an

excursion or a critical configuration, thus adequate margin is provided.

**B. Core Monitoring**

The SRM's are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and station startup. Requiring two operable SRM's in or adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the SRM. In this case only, the SRM or dunking type detector count rate is permitted to be less than 3 counts per second.

**C. Fuel Storage Pool Water Level**

To assure that there is adequate water to shield and cool the irradiated fuel assemblies stored in the pool, a minimum pool water level is established. The minimum water level of 33 feet is established because it would be a significant change from the normal level (37'9") well above a level to assure adequate cooling (just above active fuel) and above the level at which the GSEP action is initiated (5' uncontrolled loss of level with level decreasing).

**D.** During certain periods. It is desirable to perform maintenance on two control rods and/or control rod drives at the same time. This specification provides assurance that inadvertent criticality does not occur during such maintenance.



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN STATION UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 44  
License No. DPR-25

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated May 15, 1980, as supplemented September 3, 1980, 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-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 44, 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



Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 8, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 44

FACILITY OPERATING LICENSE NO. DPR-25

DOCKET NO. 50-249

Replace the attached pages of the Appendix "A" Technical Specifications with the attached revised pages.

Remove

151  
152  
155

Replace

151  
152  
155

## 3.10 LIMITING CONDITION FOR OPERATION

3.10 REFUELINGApplicability:

Applies to fuel handling and core reactivity limitations.

Objective:

To assure core reactivity is within capability of the control rods and to prevent criticality during refueling.

Specification:

## A. Refueling Interlocks

The reactor mode switch shall be locked in the "Refuel" position during core alterations and the refueling interlocks shall be operable except as specified in Specifications 3.10.D and 3.10.E.

## B. Core Monitoring

During core alterations two SRM's shall be operable, one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant. For an SRM to be considered operable, the following conditions shall be satisfied:

## 4.10 SURVEILLANCE REQUIREMENT

4.10 REFUELINGApplicability:

Applies to the periodic testing of those interlocks and instruments used during refueling.

Objective:

To verify the operability of instrumentation and interlocks used in refueling.

Specification:

## A. Refueling Interlocks

Prior to any fuel handling, with the head off the reactor vessel, the refueling interlocks shall be functionally tested. They shall also be tested at weekly intervals thereafter until no longer required and following any repair work associated with the interlocks.

## B. Core Monitoring

Prior to making any alterations to the core the SRM's shall be functionally tested and checked for neutron response. Thereafter, the SRM's will be checked daily for response, except when the conditions of 3.10.B.2.a and 3.10.B.2.b are met.

## 3.10 LIMITING CONDITION FOR OPERATION

1. The SRM shall be inserted to the normal operating level. (Use of special moveable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors are permissible as long as the detector is connected into the normal SRM circuit.)
2. The SRM or dunking type detector shall have a minimum of 3 cps with all rods fully inserted in the core except when both of the following conditions are fulfilled:
  - a) No more than two fuel assemblies are present in the core quadrant associated with the SRM.
  - b) While in core, these fuel assemblies are in locations adjacent to the SRM.

## C. Fuel Storage Pool Water Level

Whenever irradiated fuel is stored in the fuel storage pool, the pool water level shall be maintained at a level of 33 feet.

## D. Control Rod and Control Rod Drive Maintenance

- A maximum of two non-adjacent control rods separated by more than two control cells in any direction, may be withdrawn from the core for the purpose of performing control rod and/or control rod drive maintenance provided the following conditions are satisfied:

1. The reactor mode switch shall be locked in the "re-fuel" position. The re-fueling interlock which prevents more than one control rod from being withdrawn may be bypassed for one of the control rods on which maintenance is being performed. All other re-fueling interlocks shall be operable.

## 4.10 SURVEILLANCE REQUIREMENT

## C. Fuel Storage Pool Water Level

Whenever irradiated fuel is stored in the fuel storage pool, the pool level shall be recorded daily.

## D. Control Rod Drive and Control Rod Drive Maintenance

1. This surveillance requirement is the same as given in 4.10.A.

**A. Refueling Interlocks**

During refueling operations, the reactivity potential of the core is being altered. It is necessary to require certain interlocks and restrict certain refueling procedures such that there is assurance that inadvertent criticality does not occur.

To minimize the possibility of loading fuel into a cell containing no control rod, it is required that all control rods are fully inserted when fuel is being loaded into the reactor core. This requirement assures that during refueling the refueling interlocks, as designed, will prevent inadvertent criticality. The core reactivity limitation of Specifications 3.2 limits the core alterations to assure that the resulting core loading can be controlled with the reactivity control system and interlocks at any time during shutdown or the following operating cycle.

Addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the "Refuel" position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. Likewise, if the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn.

For a new core the dropping of a fuel assembly into a vacant fuel location adjacent to a withdrawn control rod does not result in an

excursion or a critical configuration, thus adequate margin is provided.

**B. Core Monitoring**

The SRM's are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and station startup. Requiring two operable SRM's in or adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the SRM. In this case only, the SRM or dunking type detector count rate is permitted to be less than 3 counts per second.

**C. Fuel Storage Pool Water Level**

To assure that there is adequate water to shield and cool the irradiated fuel assemblies stored in the pool, a minimum pool water level is established. The minimum water level of 33 feet is established because it would be a significant change from the normal level (37'9") well above a level to assure adequate cooling (just above active fuel) and above the level at which the GSEP action is initiated (5' uncontrolled loss of level with level decreasing).

**D.** During certain periods. It is desirable to perform maintenance on two control rods and/or control rod drives at the same time. This specification provides assurance that inadvertent criticality does not occur during such maintenance.



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

COMMONWEALTH EDISON COMPANY  
AND  
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

QUAD CITIES STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 58  
License No. DPR-29

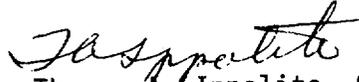
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated May 15, 1980, as supplemented September 3, 1980, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the 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 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. 58, 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

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 8, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 58

FACILITY OPERATING LICENSE NO. DPR-29

DOCKET NO. 50-254

Replace the attached pages of the Appendix "A" Technical Specifications with the attached revised pages.

Remove

3.10/4.10-2  
3.10/4.10-4

Replace

3.10/4.10-2  
3.10/4.10-4

- b. Hoist overload.
- c. High position limitation.

**B. Core Monitoring**

During core alterations, two SRM's shall be operable, one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant. For an SRM to be considered operable, the following conditions shall be satisfied:

1. The SRM shall be inserted to the normal operating level (use of special movable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors is permissible as long as the detector is connected into the proper circuitry which contains the required rod blocks).
2. The SRM or dunking type detector shall have a minimum of 3 cps with all rods fully inserted in the core except when both of the following conditions are fulfilled:
  - a) No more than two fuel assemblies are present in the core quadrant associated with the SRM.
  - b) While in core, these fuel assemblies are in locations adjacent to the SRM.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool water level shall be maintained at a level of at least 33 feet.

**D. Control Rod and Control Drive Maintenance**

A maximum of two nonadjacent control rods separated by more than two control cells in any direction may be withdrawn from the core for the purpose of performing control rod and/or control rod drive maintenance 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 for one of the control rods on which maintenance is being performed. All other refueling interlocks shall be operable.
2. Specification 3.3.A.1 shall be met, or the control rod directional control valves for a minimum of eight control rods surrounding each drive out of service for maintenance will be disarmed electrically and sufficient mar-

**B. Core Monitoring**

Prior to any alterations to the core, the SRM's shall be functionally tested and checked for neutron response. Thereafter, the SRM's shall be checked daily for response, except when the conditions of 3.10.B.2.a and 3.10.B.2.b are met.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool level shall be recorded daily.

**D. Control Rod and Control Rod Drive Maintenance**

1. Sufficient control rods shall be withdrawn prior to performing this maintenance to demonstrate with a margin of 0.25%  $\Delta k$  that the core can be made subcritical at any time during the maintenance with the strongest operable control rod fully withdrawn and all other operable rods fully inserted.

Alternately, if a minimum of eight control rods surrounding each control rod out of service for maintenance are to be fully inserted and have their directional control valves electrically disarmed, the 0.25%  $\Delta k$  margin will

QUAD-CITIES  
DPR-29

3.10 LIMITING CONDITIONS FOR OPERATION BASES.

- A. During refueling operations, the reactivity potential of the core is being altered. It is necessary to require certain interlocks and restrict certain refueling procedures such that there is assurance that inadvertent criticality does not occur.

To minimize the possibility of loading fuel into a cell containing no control rod, it is required that all control rods are fully inserted when fuel is being loaded into the reactor core. This requirement assures that during refueling, the refueling interlocks will prevent inadvertent criticality as designed. The core reactivity limitation of Specification 3.2 limits the core alterations to assure that the resulting core loading can be controlled with the reactivity control system and interlocks at any time during shutdown or the following operating cycle.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist.

Likewise, if the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the Refuel position, only one control rod can be withdrawn.

- B. The SRM are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and station startup. Requiring two operable SRM in or adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the SRM. In this case only, the SRM or dunking type detector count rate is permitted to be less than 3 counts per second.
- C. To assure that there is adequate water to shield and cool the irradiated fuel assemblies stored in the pool, a minimum pool water level is established. The minimum water level of 33 feet is established because it would be a significant change from the normal level (37 feet 9 inches), well above a level to assure adequate cooling (just above active fuel), and above the level at which GSEP action is initiated (5 feet uncontrolled loss of level with level decreasing).
- D. During certain periods, it is desirable to perform maintenance on two control rods and/or control rod drives at the same time. This specification provides assurance that inadvertent criticality does not occur during such maintenance.

The maintenance is performed with the mode switch in the Refuel position to provide the refueling interlocks normally available during refueling operations as explained in Part A of these bases. In order to withdraw a second control rod after withdrawal of the first rod, it is necessary to bypass the refueling interlock on the first control rod which prevents more than one control rod from being withdrawn at the same time. The requirement that an adequate shutdown margin be demonstrated with the control rods remaining in service ensures that inadvertent criticality cannot occur during this maintenance. The shutdown margin is verified by demonstrating that the core is shut down even if the strongest control rod remaining in service is fully withdrawn. Disarming the directional control valves does not inhibit control rod scram capability.

- E. The intent of this specification is to permit the unloading of a significant portion of the reactor core for such purposes as inservice inspection requirements, examination of the core support plate, etc. This specification provides assurance that inadvertent criticality does not occur during such operation.

This operation is performed with the mode switch in the Refuel position to provide the refueling interlocks normally available during refueling as explained in the bases for Specification 3.10.A. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod which prevents more than one control rod from being withdrawn at a time. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor



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

COMMONWEALTH EDISON COMPANY  
AND  
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-265

QUAD CITIES STATION UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 53  
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 May 15, 1980, as supplemented September 3, 1980, 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 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. 53, 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

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 8, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 53

FACILITY OPERATING LICENSE NO. DPR-30

DOCKET NO. 50-265

Replace the attached pages of the Appendix "A" Technical Specifications with the attached revised pages.

Remove

3.10/4.10-2  
3.10/4.10-4

Replace

3.10/4.10-2  
3.10/4.10-4

- b. Hoist overload.
- c. High position limitation.

**B. Core Monitoring**

During core alterations, two SRM's shall be operable, one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant. For an SRM to be considered operable, the following conditions shall be satisfied:

1. The SRM shall be inserted to the normal operating level (use of special movable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors is permissible as long as the detector is connected into the proper circuitry which contains the required rod blocks).
2. The SRM or dunking type detector shall have a minimum of 3 cps with all rods fully inserted in the core except when both of the following conditions are fulfilled:
  - a) No more than two fuel assemblies are present in the core quadrant associated with the SRM.
  - b) While in core, these fuel assemblies are in locations adjacent to the SRM.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool water level shall be maintained at a level of at least 33 feet.

**D. Control Rod and Control Drive Maintenance**

A maximum of two nonadjacent control rods separated by more than two control cells in any direction may be withdrawn from the core for the purpose of performing control rod and/or control rod drive maintenance 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 for one of the control rods on which maintenance is being performed. All other refueling interlocks shall be operable.
2. Specification 3.3.A.1 shall be met, or the control rod directional control valves for a minimum of eight control rods surrounding each drive out of service for maintenance will be disarmed electrically and sufficient mar-

**B. Core Monitoring**

Prior to any alterations to the core, the SRM's shall be functionally tested and checked for neutron response. Thereafter, the SRM's shall be checked daily for response, except when the conditions of 3.10.B.2.a and 3.10.B.2.b are met.

**C. Fuel Storage Pool Water Level**

Whenever irradiated fuel is stored in the fuel storage pool, the pool level shall be recorded daily.

**D. Control Rod and Control Rod Drive Maintenance**

1. Sufficient control rods shall be withdrawn prior to performing this maintenance to demonstrate with a margin of 0.25%  $\Delta k$  that the core can be made subcritical at any time during the maintenance with the strongest operable control rod fully withdrawn and all other operable rods fully inserted.

Alternately, if a minimum of eight control rods surrounding each control rod out of service for maintenance are to be fully inserted and have their directional control valves electrically disarmed, the 0.25%  $\Delta k$  margin will

### 3.10 LIMITING CONDITIONS FOR OPERATION BASES

- A. During refueling operations, the reactivity potential of the core is being altered. It is necessary to require certain interlocks and restrict certain refueling procedures such that there is assurance that inadvertent criticality does not occur.

To minimize the possibility of loading fuel into a cell containing no control rod, it is required that all control rods are fully inserted when fuel is being loaded into the reactor core. This requirement assures that during refueling, the refueling interlocks will prevent inadvertent criticality as designed. The core reactivity limitation of Specification 3.2 limits the core alterations to assure that the resulting core loading can be controlled with the reactivity control system and interlocks at any time during shutdown or the following operating cycle.

The addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks on rod withdrawal and movement of the refueling platform. When the mode switch is in the Refuel position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist.

Likewise, if the refueling platform is over the core with fuel on a hoist, control rod motion is blocked by the interlocks. With the mode switch in the Refuel position, only one control rod can be withdrawn.

- B. The SRM are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and station startup. Requiring two operable SRM in or adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. Requiring a minimum of 3 counts per second whenever criticality is possible provides assurance that neutron flux is being monitored. Criticality is considered to be impossible if there are no more than two assemblies in a quadrant and if these are in locations adjacent to the SRM. In this case only, the SRM or dunking type detector count rate is permitted to be less than 3 counts per second.
- C. To assure that there is adequate water to shield and cool the irradiated fuel assemblies stored in the pool, a minimum pool water level is established. The minimum water level of 33 feet is established because it would be a significant change from the normal level (37 feet 9 inches), well above a level to assure adequate cooling (just above active fuel), and above the level at which GSEP action is initiated (5 feet uncontrolled loss of level with level decreasing).
- D. During certain periods, it is desirable to perform maintenance on two control rods and/or control rod drives at the same time. This specification provides assurance that inadvertent criticality does not occur during such maintenance.

The maintenance is performed with the mode switch in the Refuel position to provide the refueling interlocks normally available during refueling operations as explained in Part A of these bases. In order to withdraw a second control rod after withdrawal of the first rod, it is necessary to bypass the refueling interlock on the first control rod which prevents more than one control rod from being withdrawn at the same time. The requirement that an adequate shutdown margin be demonstrated with the control rods remaining in service ensures that inadvertent criticality cannot occur during this maintenance. The shutdown margin is verified by demonstrating that the core is shut down even if the strongest control rod remaining in service is fully withdrawn. Disarming the directional control valves does not inhibit control rod scram capability.

- E. The intent of this specification is to permit the unloading of a significant portion of the reactor core for such purposes as inservice inspection requirements, examination of the core support plate, etc. This specification provides assurance that inadvertent criticality does not occur during such operation.

This operation is performed with the mode switch in the Refuel position to provide the refueling interlocks normally available during refueling as explained in the bases for Specification 3.10.A. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod which prevents more than one control rod from being withdrawn at a time. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 49 TO PROVISIONAL OPERATING LICENSE NO. DPR-19  
AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE NO. DPR-25  
AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. DPR-29  
AND AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DRESDEN NUCLEAR POWER STATION, UNIT NOS. 2 AND 3

QUAD CITIES NUCLEAR POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-237, 50-249, 50-254 AND 50-265

Introduction

By letter dated 5/15/80 (Ref. 1), Commonwealth Edison Company (CECo, the licensee) proposed amendments to the Technical Specifications for Dresden Units 2 and 3 and Quad Cities Units 1 and 2. These amendments would allow the count rate on the Source Range Monitor (SRM) channels to go below three (3) counts per second (cps) when there are no more than two (2) fuel assemblies in a quadrant and they are positioned adjacent to the SRM in that quadrant.

Discussion and Evaluation

The current specifications require that a count rate of 3 cps be maintained whenever core alterations are being performed. This count rate is monitored by SRM's in the quadrant and adjacent to the quadrant being altered, or by "dunking detectors" connected into the appropriate rod block circuitry. The specifications also require that there be two (2) operable SRM's in or adjacent to any quadrant where fuel or control rods are being moved.

The first requirement assures that, whenever criticality is possible, neutron flux is being monitored so that inadvertent approach to criticality cannot be achieved. The second requirement assures that there is adequate monitoring in any quadrant in which alterations are being made.

During normal refueling and fuel shuffling, a count rate of 3 cps is easily maintained due to the presence of other exposed fuel in the core. At times when the entire core is to be removed, however, the count rate will eventually fall to below 3 cps. When the last few assemblies are being removed, there is difficulty in demonstrating a count rate of 3 cps using either SRM's or dunker detectors.

The General Electric Co. (GE), the fuel vendor, has provided information that, for all fuel types in use in the Dresden 2/3 and Quad Cities 1/2 cores, a minimum of nine (9) uncontrolled fuel assemblies in a 3x3 array is required to achieve criticality (Refs. 2, 3, 4). Thus, when there are two (2) or less fuel assemblies in a given quadrant, criticality cannot be achieved even under the most uncontrolled conditions. The basis for requiring a minimum count rate of 3 cps whenever core alterations are being performed is to ensure that neutron production is being monitored whenever criticality is possible. This basis is satisfied by the proposed specification which would allow less than 3 cps on any SRM only when two (2) or less fuel assemblies are in that quadrant, and those assemblies are adjacent to the SRM to ensure monitoring. This would allow all SRM's to have less than 3 cps only if 8 or less assemblies are in the core (2 per quadrant) and these are adjacent to the SRM's. In such a configuration, adequate margin to criticality is assured so that the 3 cps rate need not be maintained.

It is expected that adoption of the proposed technical specification change will eliminate the need for use of "dunking detectors" to demonstrate a 3 cps count rate during removal of the last few fuel assemblies. This in itself is a desirable objective. Use of dunking detectors increases risk of dropping loose objects into the vessel and increases personnel exposure required for their use. Moreover, experience has shown them to be relatively failure-prone and otherwise unreliable.

On the basis of the foregoing discussion and evaluation, the proposed Technical Specification change is acceptable.

#### Environmental Considerations

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

Dated: September 8, 1980

### References

1. Letter from D. L. Peoples (CECo) to Director of NRR (NRC) dated May 15, 1980.
2. Letter from H. A. Zimmerman (GE) to J. M. Dolter (CECo) dated October 6, 1977.
3. Letter from H. A. Zimmerman (GE) to J. M. Dolter (CECo) dated November 10, 1977.
4. Letter from A. DeVita (GE) to G. Grable (CECo) dated August 29, 1980.
5. Letter from R. F. Janecek (CECo) to R. Bevan (NRC) dated September 4, 1980.

UNITED STATES NUCLEAR REGULATORY COMMISSION  
DOCKET NOS. 50-237, 50-249, 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 No. 49 to Provisional Operating License No. DPR-19, and Amendment No. 44 to Facility Operating License No. DPR-25, issued to Commonwealth Edison Company, which revised the Technical Specifications for operation of the Dresden Nuclear Power Station, Unit Nos. 2 and 3, located in Grundy County, Illinois. The Commission has also issued Amendment No. 58 to Facility Operating License No. DPR-29, and Amendment No. 53 to Facility Operating License No. DPR-30, issued to Commonwealth Edison Company and Iowa-Illinois Gas and Electric Company, which revised the Technical Specifications for operation of the Quad Cities Nuclear Power Station, Unit Nos. 1 and 2, located in Rock Island County, Illinois. The amendments are effective as of the date of issuance.

The amendments revise the Technical Specifications to allow the count rate on the Source Range Monitor (SRM) channels to go below three (3) counts per second when there are two or less fuel assemblies in a quadrant and they are positioned adjacent to the SRM in that quadrant.

The application for the 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

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public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR Section 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 amendments dated May 15, 1980, as supplemented September 3, 1980, (2) Amendment No. 49 to License No. DPR-19, Amendment No. 44 to License No. DPR-25, Amendment No. 58 to License No. DPR-29, and Amendment No. 53 to License No. DPR-30, and (3) the Commission's 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 Morris Public Library, 604 Liberty Street, Morris, Illinois, for Dresden 2 and 3 and at the Moline Public Library, 504 - 17th Street, Moline, Illinois, for Quad Cities 1 and 2. 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 Licensing.

Dated at Bethesda, Maryland this 8th day of September 1980.

FOR THE NUCLEAR REGULATORY COMMISSION



Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing