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

February 8, 1999

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

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. MA4263, MA4264, MA4286 AND MA4287)

Dear Mr. Kingsley:

The Commission has issued the enclosed Amendment No. 170 to Facility Operating License No. DPR-19 and Amendment No. 165 to Facility Operating License No. DPR-25 for Dresden, Units 2 and 3, and Amendment No. 183 to Facility Operating License No. DPR-29 and Amendment No. 180 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments are in response to your application dated November 30, 1998, as supplemented by letter dated January 8, 1999.

The amendments relocate the requirement to remove Reactor Protection System (RPS) shorting links to the Updated Final Safety Analysis Report (UFSAR). Currently, the Technical Specifications (TSs) require the shorting links to be removed from the RPS circuitry prior to and during the time any control rod is withdrawn unless adequate SHUTDOWN MARGIN (SDM) has been demonstrated and the "one-rod-out" Refuel mode switch interlock has been demonstrated OPERABLE (an exception exists that allows shorting links to remain installed while in MODE 5 for control rod removal per Specification 3.10.I and 3.10.J). Removal of the shorting links enables a non-coincident scram based on high neutron flux as detected by any neutron monitor. The changes affect TS Sections 3/4.1.A, "Reactor Protection System (RPS)," 3/4.10.B, "Refueling Operations, Instrumentation," and 3/4.12.B, "SHUTDOWN MARGIN Demonstrations."

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

ORIG. SIGNED BY
Lawrence W. Rossbach, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-237, 50-249, 50-254, 50-265

Enclosures:
1. Amendment No. 170 to DPR-19
2. Amendment No. 165 to DPR-25
3. Amendment No. 183 to DPR-29
4. Amendment No. 180 to DPR-30
3. Safety Evaluation

cc w/encl: See next page

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A copy of the Safety Evaluation is also enclosed. The Notice of Issuance wi" ıcluded in the Commission's biweekly Federal Register notice.

Sincerely,

Lawrence W. Rossbach, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-237, 50-249, 50-254, 50-265

Enclosures:
1. Amendment No. 170 to DPR-19
2. Amendment No. 165 to DPR-25
3. Amendment No. 183 to DPR-29
4. Amendment No. 180 to DPR-30
3. Safety Evaluation

cc w/encl: See next page

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 170
License No. DPR-19

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated November 30, 1998, as supplemented by letter dated January 8, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

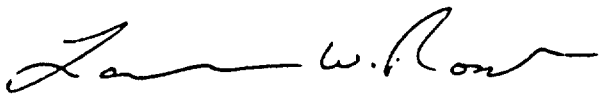
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-19 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 170, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days including the relocation of information from the Technical Specifications to the licensee's Updated Final Safety Analysis Report (UFSAR) as described in the licensee's application dated November 30, 1998, as supplemented by letter dated January 8, 1999, and evaluated in the staff's safety evaluation dated February 8, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION



Lawrence W. Rossbach, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 8, 1999

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 165
License No. DPR-25

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

   A. The application for amendment by the Commonwealth Edison Company (the licensee) dated November 30, 1998, as supplemented by letter dated January 8, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 165, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days including the relocation of information from the Technical Specifications to the licensee's Updated Final Safety Analysis Report (UFSAR) as described in the licensee's application dated November 30, 1998, as supplemented by letter dated January 8, 1999, and evaluated in the staff's safety evaluation dated February 8, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION

Lawrence W. Rossbach, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 8, 1999

ATTACHMENT TO LICENSE AMENDMENT NOS. 170 AND 165

FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE	INSERT
3/4.1-2	3/4.1-2
3/4.1-6	3/4.1-6
B 3/4.1-1	B 3/4.1-1
B 3/4.1-2	B 3/4.1-2
3/4.10-3	3/4.10-3
3/4.10-4	3/4.10-4
B 3/4.10-1	B 3/4.10-1
3/4.12-2	3/4.12-2

TABLE 3.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Functional Unit		Applicable OPERATIONAL MODE(s)	Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM[a]	ACTION
1.	Intermediate Range Monitor:			
a.	Neutron Flux - High	2	3	11
		3, 4	2	12
		5	3	13
b.	Inoperative	2	3	11
		3, 4	2	12
		5	3	13
2.	Average Power Range Monitor[e]:			
a.	Setdown Neutron Flux - High	2	2	11
		3	2	12
		5[g]	2	13
b.	Flow Biased Neutron Flux - High	1	2	14
c.	Fixed Neutron Flux - High	1	2	14
d.	Inoperative	1, 2	2	11
		3	2	12
		5[g]	2	13
3.	Reactor Vessel Steam Dome Pressure - High	1, 2[f]	2	11
4.	Reactor Vessel Water Level - Low	1, 2	2	11

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATION

(a) A CHANNEL may be placed in an inoperable status for up to 2 hours for required surveillance without placing the TRIP SYSTEM in the tripped condition provided at least one OPERABLE CHANNEL in the same TRIP SYSTEM is monitoring that parameter.

(b) This function may be bypassed, provided a control rod block is actuated, for reactor protection system logic reset in Refuel and Shutdown positions of the reactor mode switch.

(c) Deleted

(d) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.

(e) An APRM CHANNEL is inoperable if there are fewer than 2 LPRM inputs per level or there are less than 50% of the normal complement of LPRM inputs to an APRM CHANNEL.

(f) This function is not required to be OPERABLE when the reactor pressure vessel head is unbolted or removed per Specification 3.12.A.

(g) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.

(h) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(i) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.10.I or 3.10.J.

(j) This function is not required to be OPERABLE when reactor pressure is less than 600 psig.

BASES

3/4.1.A REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system (RPS) automatically initiates a reactor scram to:

a. preserve the integrity of the fuel cladding,

b. preserve the integrity of the primary system, and

c. minimize the energy which must be absorbed and prevent criticality following a loss-of-coolant accident.

This specification provides the Limiting Conditions for Operation necessary to preserve the ability of the system to perform its intended function, even during periods when instrument CHANNEL(s) may be out-of-service because of maintenance. When necessary, one CHANNEL may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent TRIP SYSTEM(s), each having a minimum of two CHANNEL(s) of tripping devices. Each CHANNEL has an input from at least one instrument CHANNEL which monitors a critical parameter. The outputs of the CHANNEL(s) are combined in a one-out- of-two-logic, i.e., an input signal on either one or both of the CHANNEL(s) will cause a TRIP SYSTEM trip. The outputs of the TRIP SYSTEM(s) are arranged so that a trip on both systems is required to produce a reactor scram. This system meets the intent of the proposed IEEE 279, "Standard for Nuclear Power Plant Protection Systems" issued September 13, 1966. The system has a reliability greater than that of a two-out-of-three system and somewhat less than that of a one-out-of-two syst) (reference APED 5179). The bases for the trip settings of the RPS are discussed in the Bases for Specification 2.2.A.

BASES

The primary reactivity control functions during refueling are the refueling interlocks and the SHUTDOWN MARGIN calculations, which together provide assurance that adequate SHUTDOWN MARGIN is available. The IRMs also provide backup protection for any significant reactivity excursions.

The IRM system provides protection against excessive power levels and short reactor periods in the startup and intermediate power ranges (reference SAR Sections 7.4.4.2 and 7.4.4.3).

In the power range, the APRM system provides required protection (reference SAR Section 7.4.5.2). Thus, the IRM system is not required (and is automatically bypassed) in OPERATIONAL MODE 1, the APRMs cover only the intermediate and power range; and the IRMs provide adequate coverage in the startup and intermediate range. The IRM inoperative function ensures that the instrument CHANNEL fails in the tripped condition upon loss of detector voltage.

Three APRM instrument CHANNEL(s) are provided for each TRIP SYSTEM. APRM CHANNEL(s) #1 and #3 operate contacts in one logic path and APRM CHANNEL(s) #2 and #3 operate contacts in the other logic path of the TRIP SYSTEM. APRM CHANNEL(s) #4, #5 and #6 are arranged similarly in the other TRIP SYSTEM's dual logic paths. Each TRIP SYSTEM has one more APRM than is necessary to meet the minimum number required per CHANNEL. This allows the bypassing of one APRM per TRIP SYSTEM for maintenance, testing, or calibration. Additional IRM CHANNEL(s) have also been provided to allow for bypassing of one such CHANNEL.
A reactor mode switch is provided which actuates or bypasses the various scram functions appropriate to the particular plant operating status (reference SAR Section 7.7.1.2). A bypass in the Refuel or Startup/Hot Standby operational modes is provided for the turbine condenser low vacuum scram and main steam line isolation valve closure scrams for flexibility during startup and to allow repairs to be made to the turbine condenser. While this bypass is in effect, protection is provided against pressure or flux increases by the high-pressure scram and APRM 15% scram, respectively, which are effective in Startup/Hot Standby.

The manual scram function is available in OPERATIONAL MODE(s) 1 through 5, thus providing for a manual means of rapidly inserting control rods whenever fuel is in the reactor.

The turbine stop valve closure scram, the turbine EHC control oil low pressure scram, and the turbine control valve fast closure scram occur by design on turbine first stage pressure which is normally equivalent to ~45% RATED THERMAL POWER. However, since this is dependent on bypass valve position, the conservative reactor power is used to determine applicability.

Surveillance requirements for the reactor protection system are selected in order to demonstrate proper function and operability. The surveillance intervals are determined in many different ways, such as, 1) operating experience, 2) good engineering judgement, 3) reliability analyses, or 4) other analyses that are found acceptable to the NRC. The performance of the specified surveillances at the specified frequencies provides assurance that the protective functions associated with each CHANNEL can be completed as assumed in the safety analyses. A surveillance interval of "prior to startup" assures that these functions are available to perform their safety functions during control

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room, and

2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant.

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:

   a. Performance of a CHANNEL CHECK.

   b. Verifying the detectors are inserted to the normal operating level, and

   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.

2. Performance of a CHANNEL FUNCTIONAL TEST:

   a. Within 24 hours prior to the start of CORE ALTERATION(s), and

   b. At least once per 7 days.

3. Verifying that the channel count rate is at least 3 cps:

   a. Prior to control rod withdrawal,

   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),

   c. At least once per 24 hours.

---

a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

3.10 - LIMITING CONDITIONS FOR OPERATION

4.10 - SURVEILLANCE REQUIREMENTS

2. While in the core, these two fuel assemblies are in locations adjacent to the SRM; and

3. In the case of movable detectors, each group of fuel assemblies shall be separated by at least two fuel cell locations from any other fuel assemblies.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATION(s) and fully insert all insertable control rods.

BASES

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

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. 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.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and 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. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. 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 source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

3.12 - LIMITING CONDITIONS FOR OPERATION	4.12 - SURVEILLANCE REQUIREMENTS
B. SHUTDOWN MARGIN Demonstrations	B. SHUTDOWN MARGIN Demonstrations
The provisions of Specifications 3.10.A and 3.10.C and Table 1-2 may be suspended to permit the reactor mode switch to be in the Startup position and to allow more than one control rod to be withdrawn for SHUTDOWN MARGIN demonstration, provided that at least the following requirements are satisfied.	Within 30 minutes prior to and at least once per 12 hours during the performance of a SHUTDOWN MARGIN demonstration, verify that;
1. The source range monitors are OPERABLE per Specification 3.10.B.	1. The source range monitors are OPERABLE per Specification 3.10.B,
2. The rod worth minimizer is OPERABLE per Specification 3.3.L and is programmed for the SHUTDOWN MARGIN demonstration, or conformance with the SHUTDOWN MARGIN demonstration procedure is verified by a second licensed operator or other technically qualified individual.	2. The rod worth minimizer is OPERABLE with the required program per Specification 3.3.L or a second licensed operator or other technically qualified individual is present and verifies compliance with the SHUTDOWN MARGIN demonstration procedures, and
3. The "rod-out-notch-override" control shall not be used during out-of-sequence movement of the control rods.	3. No other CORE ALTERATION(s) are in progress.
4. No other CORE ALTERATION(s) are in progress.	

APPLICABILITY:

OPERATIONAL MODE 5, during SHUTDOWN MARGIN demonstrations.

ACTION:

With the requirements of the above specification not satisfied, immediately place the reactor mode switch in the Shutdown or Refuel position.

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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 183
License No. DPR-29

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

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 30, 1998, as supplemented by letter dated January 8, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-29 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 183 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days including the relocation of information from the Technical Specifications to the licensee's Updated Final Safety Analysis Report (UFSAR) as described in the licensee's application dated November 30, 1998, as supplemented by letter dated January 8, 1999, and evaluated in the staff's safety evaluation dated February 8, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 8, 1999

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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 180
License No. DPR-30

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

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 30, 1998, as supplemented by letter dated January 8, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 180, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days including the relocation of information from the Technical Specifications to the licensee's Updated Final Safety Analysis Report (UFSAR) as described in the licensee's application dated November 30, 1998, as supplemented by letter dated January 8, 1999, and evaluated in the staff's safety evaluation dated February 8, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 8, 1999

ATTACHMENT TO LICENSE AMENDMENT NOS. 183 AND 180

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

DOCKET NOS. 50-254 AND 50-265

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE	INSERT
3/4.1-2	3/4.1-2
3/4.1-6	3/4.1-6
B 3/4.1-1	B 3/4.1-1
B 3/4.1-2	B 3/4.1-2
3/4.10-3	3/4.10-3
3/4.10-4	3/4.10-4
B 3/4.10-1	B 3/4.10-1
3/4.12-2	3/4.12-2

TABLE 3.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Functional Unit	Applicable OPERATIONAL MODE(s)	Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM[a]	ACTION
1. Intermediate Range Monitor:			
a. Neutron Flux - High	2	3	11
	3, 4	2	12
	5	3	13
b. Inoperative	2	3	11
	3, 4	2	12
	5	3	13
2. Average Power Range Monitor[e]:			
a. Setdown Neutron Flux - High	2	2	11
	3	2	12
	5[g]	2	13
b. Flow Biased Neutron Flux - High	1	2	14
c. Fixed Neutron Flux - High	1	2	14
d. Inoperative	1, 2	2	11
	3	2	12
	5[g]	2	13
3. Reactor Vessel Steam Dome Pressure - High	1, 2[f]	2	11
4. Reactor Vessel Water Level - Low	1, 2	2	11

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATION

(a) A CHANNEL may be placed in an inoperable status for up to 2 hours for required surveillance without placing the TRIP SYSTEM in the tripped condition provided at least one OPERABLE CHANNEL in the same TRIP SYSTEM is monitoring that parameter.

(b) This function may be bypassed, provided a control rod block is actuated, for reactor protection system logic reset in Refuel and Shutdown positions of the reactor mode switch.

(c) Deleted.

(d) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.

(e) An APRM CHANNEL is inoperable if there are fewer than 2 LPRM inputs per level or there are less than 50% of the normal complement of LPRM inputs to an APRM CHANNEL.

(f) This function is not required to be OPERABLE when the reactor pressure vessel head is unbolted or removed per Specification 3.12.A.

(g) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.

(h) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(i) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.10.I or 3.10.J.

BASES

3/4.1.A REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system (RPS) automatically initiates a reactor scram to:

a. preserve the integrity of the fuel cladding,

b. preserve the integrity of the primary system, and

c. minimize the energy which must be absorbed and prevent criticality following a loss-of-coolant accident.

This specification provides the Limiting Conditions for Operation necessary to preserve the ability of the system to perform its intended function, even during periods when instrument CHANNEL(s) may be out-of-service because of maintenance. When necessary, one CHANNEL may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent TRIP SYSTEM(s), each having a minimum of two CHANNEL(s) of tripping devices. Each CHANNEL has an input from at least one instrument CHANNEL which monitors a critical parameter. The outputs of the CHANNEL(s) are combined in a one-out- of-two-logic, i.e., an input signal on either one or both of the CHANNEL(s) will cause a TRIP SYSTEM trip. The outputs of the TRIP SYSTEM(s) are arranged so that a trip on both systems is required to produce a reactor scram. This system meets the intent of the proposed IEEE 279, "Standard for Nuclear Power Plant Protection Systems" issued September 13, 1966. The system has a reliability greater than that of a two-out-of-three system and somewhat less than that of a one-out-of-two system (reference APED 5179). The bases for the trip settings of the RPS are discussed in the Bases for Specification 2.2.A.

The primary reactivity control functions during refueling are the refueling interlocks and the SHUTDOWN MARGIN calculations, which together provide assurance that adequate SHUTDOWN MARGIN is available. The IRMs also provide backup protection for any significant reactivity excursions.

BASES

The IRM system provides protection against excessive power levels and short reactor periods in the startup and intermediate power ranges (reference SAR Sections 7.4.4.2 and 7.4.4.3).

In the power range, the APRM system provides required protection (reference SAR Section 7.4.5.2). Thus, the IRM system is not required (and is automatically bypassed) in OPERATIONAL MODE 1, the APRMs cover only the intermediate and power range; and the IRMs provide adequate coverage in the startup and intermediate range. The IRM inoperative function ensures that the instrument CHANNEL fails in the tripped condition upon loss of detector voltage.

Three APRM instrument CHANNEL(s) are provided for each TRIP SYSTEM. APRM CHANNEL(s) #1 and #3 operate contacts in one logic path and APRM CHANNEL(s) #2 and #3 operate contacts in the other logic path of the TRIP SYSTEM. APRM CHANNEL(s) #4, #5 and #6 are arranged similarly in the other TRIP SYSTEM's dual logic paths. Each TRIP SYSTEM has one more APRM than is necessary to meet the minimum number required per CHANNEL. This allows the bypassing of one APRM per TRIP SYSTEM for maintenance, testing, or calibration. Additional IRM CHANNEL(s) have also been provided to allow for bypassing of one such CHANNEL.
A reactor mode switch is provided which actuates or bypasses the various scram functions appropriate to the particular plant operating status (reference SAR Section 7.7.1.2). A bypass in the Refuel or Startup/Hot Standby operational modes is provided for the turbine condenser low vacuum scram and main steam line isolation valve closure scrams for flexibility during startup and to allow repairs to be made to the turbine condenser. While this bypass is in effect, protection is provided against pressure or flux increases by the high-pressure scram and APRM 15% scram, respectively, which are effective in Startup/Hot Standby.

The manual scram function is available in OPERATIONAL MODE(s) 1 through 5, thus providing for a manual means of rapidly inserting control rods whenever fuel is in the reactor.

The turbine stop valve closure scram, the turbine EHC control oil low pressure scram, and the turbine control valve fast closure scram occur by design on turbine first stage pressure which is normally equivalent to ~45% RATED THERMAL POWER. However, since this is dependent on bypass valve position, the conservative reactor power is used to determine applicability.

Surveillance requirements for the reactor protection system are selected in order to demonstrate proper function and operability. The surveillance intervals are determined in many different ways, such as, 1) operating experience, 2) good engineering judgement, 3) reliability analyses, or 4) other analyses that are found acceptable to the NRC. The performance of the specified surveillances at the specified frequencies provides assurance that the protective functions associated with each CHANNEL can be completed as assumed in the safety analyses. A surveillance interval of "prior to startup" assures that these functions are available to perform their safety functions during control

3.10 - LIMITING CONDITIONS FOR OPERATION

B. Instrumentation

At least 2 source range monitor[a] (SRM) CHANNEL(s) shall be OPERABLE and inserted to the normal operating level with:

1. Continuous visual indication in the control room, and

2. One of the required SRM detectors located in the quadrant where CORE ALTERATION(s) are being performed and the other required SRM detector located in an adjacent quadrant.

APPLICABILITY:

OPERATIONAL MODE 5, unless the following conditions are met:

1. No more than two fuel assemblies are present in each core quadrant associated with an SRM;

4.10 - SURVEILLANCE REQUIREMENTS

B. Instrumentation

Each of the required SRM channels shall be demonstrated OPERABLE by:

1. At least once per 12 hours:

   a. Performance of a CHANNEL CHECK.

   b. Verifying the detectors are inserted to the normal operating level, and

   c. During CORE ALTERATION(s), verifying that the detector of an OPERABLE SRM CHANNEL is located in the core quadrant where CORE ALTERATION(s) are being performed and another is located in an adjacent quadrant.

2. Performance of a CHANNEL FUNCTIONAL TEST:

   a. Within 24 hours prior to the start of CORE ALTERATION(s), and

   b. At least once per 7 days.

3. Verifying that the channel count rate is at least 3 cps:

   a. Prior to control rod withdrawal,

   b. Prior to and at least once per 12 hours during CORE ALTERATION(s),

   c. At least once per 24 hours.

---

a The use of special movable detectors during CORE ALTERATION(s) in place of the normal SRM neutron detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

3.10 - LIMITING CONDITIONS FOR OPERATION

4.10 - SURVEILLANCE REQUIREMENTS

2. While in the core, these two fuel assemblies are in locations adjacent to the SRM; and

3. In the case of movable detectors, each group of fuel assemblies shall be separated by at least two fuel cell locations from any other fuel assemblies.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATION(s) and fully insert all insertable control rods.

BASES

3/4.10.A Reactor Mode Switch

Locking the OPERABLE reactor mode switch in the Shutdown or Refuel position, as specified, ensures that the restrictions on control rod withdrawal and refueling platform movement during the refueling operations are properly activated. These conditions reinforce the refueling procedures and reduce the probability of inadvertent criticality, damage to reactor internals or fuel assemblies, and exposure of personnel to excessive radioactivity.

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. 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.

3/4.10.B Instrumentation

The OPERABILITY of at least two source range monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core, whenever reactor criticality is possible.

The source range monitors (SRM) are provided to monitor the core during periods of station shutdown and to guide the operator during refueling operations and reactor startup. Requiring two OPERABLE source range monitors in and 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. The SRM system is designed to provide a signal-to-noise ratio of at least 3:1 and a count rate of at least 3 counts per second. 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 source range monitors (i.e., spatially separated).

Special movable detectors may be used during CORE ALTERATION(s) in place of the normal SRM neutron detectors. These special detectors must be connected to the normal SRM circuits such that the applicable neutron flux indication, control rod blocks and scram signals can be generated. The special detectors provide more flexibility in monitoring reactivity changes during fuel loading since they can be positioned anywhere within the core during refueling provided they meet the location requirements of the specification.

3.12 - LIMITING CONDITIONS FOR OPERATION	4.12 - SURVEILLANCE REQUIREMENTS
B. SHUTDOWN MARGIN Demonstrations	B. SHUTDOWN MARGIN Demonstrations
The provisions of Specifications 3.10.A and 3.10.C and Table 1-2 may be suspended to permit the reactor mode switch to be in the Startup position and to allow more than one control rod to be withdrawn for SHUTDOWN MARGIN demonstration, provided that at least the following requirements are satisfied.	Within 30 minutes prior to and at least once per 12 hours during the performance of a SHUTDOWN MARGIN demonstration, verify that;
1. The source range monitors are OPERABLE per Specification 3.10.B.	1. The source range monitors are OPERABLE per Specification 3.10.B,
2. The rod worth minimizer is OPERABLE per Specification 3.3.L and is programmed for the SHUTDOWN MARGIN demonstration, or conformance with the SHUTDOWN MARGIN demonstration procedure is verified by a second licensed operator or other technically qualified individual.	2. The rod worth minimizer is OPERABLE with the required program per Specification 3.3.L or a second licensed operator or other technically qualified individual is present and verifies compliance with the SHUTDOWN MARGIN demonstration procedures, and
3. The "rod-out-notch-override" control shall not be used during out-of-sequence movement of the control rods.	3. No other CORE ALTERATION(s) are in progress.
4. No other CORE ALTERATION(s) are in progress.	

APPLICABILITY:

OPERATIONAL MODE 5, during SHUTDOWN MARGIN demonstrations.

ACTION:

With the requirements of the above specification not satisfied, immediately place the reactor mode switch in the Shutdown or Refuel position.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-19, AMENDMENT NO. 165 TO FACILITY OPERATING LICENSE NO. DPR-25, AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. DPR-29 AND AMENDMENT NO. 180 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

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

1.0 INTRODUCTION

By letter dated November 30, 1998, as supplemented by letter dated January 8, 1999, Commonwealth Edison Company (ComEd, the licensee) submitted a request to relocate the Technical Specification (TS) requirements related to Reactor Protection System (RPS) shorting links to the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee requested changes to TS 3/4.1.A, "Reactor Protection System (RPS)," 3/4.10.B, "Refueling Operations, Instrumentation," and 3/4.12.B, "SHUTDOWN MARGIN Demonstrations." Revisions to Bases Sections 3/4.1.A and 3/4.10.B reflecting these changes were also requested. Shorting link removal is required under certain plant conditions as described in detail in the following paragraphs. Removal of the shorting links enables a non-coincident scram based on high neutron flux as detected by any neutron monitor including the Source Range Monitors (SRMs), the Intermediate Range Monitors (IRMs) and the Average Power Range Monitors (APRMs). The licensee requested these revisions to prevent inadvertent and unnecessary reactor scrams that may occur during normal refueling activities. While the shorting links are removed, the work that is performed is substantially curtailed due to the possibility of an inadvertent scram causing high pressure water to be forced through the seals in the control rod drives (CRDs). Accordingly, inadvertent and unnecessary scrams may result in excessive differential pressure on the CRD seals, with the potential for premature degradation of the seals. The increased frequency of damage to the CRD seals would result in unnecessary radiation dose to plant personnel due to more frequent maintenance.

2.0 BACKGROUND

Dresden and Quad Cities Nuclear Power Stations are equipped with four SRMs, one in each quadrant of the core. During operation when the RPS shorting links are required to be installed, the SRMs provide control rod withdrawal blocks under certain circumstances, and indication to the control room. Each unit at each site is also equipped with eight IRMs. The IRMs, with four in each RPS trip system, provide a one-out-of-two taken twice reactor scram signal, as well as control rod withdrawal blocks and control room indication.

The criteria for inclusion of a requirement as a limiting condition for operation in the TSs are set forth in 10 CFR 50.36. The criteria are as follows:

(1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant system pressure boundary.

(2) a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(4) a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

As a result, existing TS requirements that fall within or satisfy any of the criteria of 10 CFR 50.36 must be retained in the TSs, while those TS requirements that do not fall within or satisfy these criteria may be relocated to other licensee controlled documents, such as the UFSAR.

3.0 EVALUATION

The licensee has proposed to relocate the TS requirements related to RPS shorting links to the UFSAR. Requirements for the RPS shorting links are found in TS 3.1.A (Table 3.1.A-1, Functional Unit 1.a and 2.a, Note c), and Limiting Conditions for Operation (LCOs) 3.10.B.3, 3.12.B.1, and Surveillance Requirements (SRs) 4.10.B.4 and 4.12.B.1. References to RPS shorting links are also made in Bases sections 3/4.1.A and 3/4.10.B.

TS 3.1.A (Table 3.1.A-1) contains OPERABILITY requirements for RPS Instrumentation. Table 3.1.A-1, Functional Unit 1.a and 2.a, Note c, addresses requirements for OPERABILITY of the IRMs and APRMs, respectively, while in MODE 5. These requirements state that "unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3/4.3.A and the 'one-rod-out' Refuel mode switch interlock has been demonstrated OPERABLE per Specification 3.10.A, the 'shorting links' shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn. However, this is not required for control rods

removed per Specification 3.10.I or 3.10.J." This amendment will relocate, in its entirety, the above requirement to the UFSAR.

LCO 3.10.B.3 contains a similar requirement for Refueling Operations Instrumentation. The LCO states that "unless adequate SHUTDOWN MARGIN has been demonstrated per Specification 3.3.A and the 'one-rod-out' Refuel position interlock has been demonstrated OPERABLE per Specification 3.10.A, the 'shorting links' shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn[b]." Footnote b states that this LCO is "not required for control rods removed per specification 3.10.I and 3.10.J." This amendment will reloca' its entirety, the above requirement to the UFS/

SR 4.10.B.4 requires t ification "...within 8 hours prior to and at lea r 12 hours during the time any cont rod is withdrawn[b] that the 'shorting links' ha. moved from the RPS circuitry unless adequate SHUTDOWN MARGIN has been dem d per Specification 3.3.A and the 'one-rod-out' Refuel position interlock has be onstrated OPERABLE per Specification 3.10.A." Footnote b states that this SR is "not ired for con.. rods removed per Specification 3.10.I or 3.10.J." This SR will be relocated to the UFSAR. This is necessary to provide consistency with the modified requirement for LCO 3.10.B.3. The requirement for removal of the shorting links will be relocated to the UFSAR.

Specification 3.12.B, contains requirements f r SHUTDOWN MARGIN Demonstrations. LCO 3.12.B.1 requires that "the source range monitors are OPERABLE with the RPS circuitry 'shorting links' removed per Specification 3.10.B." This LCO will be modified to read "the source range monitors are OPERABLE per Specification 3.10.B." This change is necessary to provide consistency with the modified Specification 3.10.B. The requirement for removal of the shorting links will be relocated to the UFSAR.

SR 4.12.B.1 requires verification that "the source range monitors are OPERABLE with the RPS circuitry 'shorting links' removed per Specification 3.10.B." This SR will be modified to require verification that "the source range monitors are OPERABLE per Specification 3.10.B." This is necessary to provide consistency with the ed requirements for LCO 3.12.B.1 and Specification 3.10.B. The requirement for val of the shorting links will be relocated to the UFSAR.

Bases sections 3/4.1.A and 3/4.10.B contain descriptions of operations with the shorting links removed. These descriptions are no longer necessary due to the relocation of shorting link removal requirements to the UFSAR.

Currently, the shorting links are required to be removed under conditions as stated above. With the shorting links removed, a non-coincident scram as detected by any neutron monitor is enabled. With the shorting links installed, the SRM high flux scram is bypassed and IRMs and APRMs provide coincident high flux scram capability. IRM and APRM coincident high flux scram capability provides the credited protection with respect to the safety analysis. Additionally, the primary reactivity control functions during refueling are the refueling interlocks and adequate SHUTDOWN MARGIN (SDM). The refueling interlocks are required to be OPERABLE per TS 3/4.10.A, "Reactor Mode Switch." Although the SDM may not have yet been demonstrated in MODE 5, SDM calculations would have been performed and, along with

procedural compliance for any CORE ALTERATIONS, would provide assurance that adequate SDM is available. Without removing shorting links, IRM and APRM operability will continue to provide scram protection with coincident logic for any significant reactivity excursion as credited in the safety analysis. The SRM channel high flux scram (with shorting links removed) provides only an uncredited backup in MODE 5. Due to the required operability of the refueling interlocks, the continued capability of the IRM and APRM coincident scram, the SRM high flux scram not being credited in the safety analysis, and procedurally-assured adequate SDM, the relocation of the shorting links removal requirement does not significantly affect safety. Furthermore, the requirement for removal of RPS shorting links does not meet any of the criteria contained in 10 CFR 50.36 for requirements to be included in TS. Therefore, the changes, as described above, to TS 3.1.A (Table 3.1.A-1, Functional Unit 1.a and 2.a, Note c), 3.10.B.3, and 3.12.B.1, are acceptable. The changes, as described above, to SRs 4.10.B.4 and 4.12.B.1 are also acceptable as these changes provide consistency with the modified LCO requirements. Changes to Bases sections 3/4.1.A and 3/4.10.B that remove references to the shorting links are appropriate and acceptable. Any changes to these requirements located in the UFSAR will be adequately controlled by the provisions of 10 CFR 50.59.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (64 FR 1032). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Burkhart

Date: February 8, 1999