September 27, 2000

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: DRESDEN - ISSUANCE OF AMENDMENTS DELETING TURBINE ELECTRO-HYDRAULIC CONTROL (EHC) LOW PRESSURE TRIP (TAC NOS. MA8355 AND MA8356)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 181 to Facility Operating License No. DPR-19 and Amendment No. 176 to Facility Operating License No. DPR-25 for the Dresden Nuclear Power Station, Units 2 and 3. The amendments are in response to your application dated February 18, 2000.

The amendments change Technical Specification (TS) 2.2 and 3/4.1.A to delete the turbine EHC low pressure trip from reactor protection system trip function requirements.

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,

/RA/
Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosures: 1. Amendment No. 181 to DPR-19
2. Amendment No. 176 to DPR-25
3. Safety Evaluation

cc w/encls: See next page

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*concurred by SE dated 6/20/00, no significant changes made

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NAME	LRossbach	CMoore	DThatcher*		AMendiola
DATE	09/15/00	09/15 /00	06/20/00	09/25/00	09/29/00

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

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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. 181
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 February 18, 2000, 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.

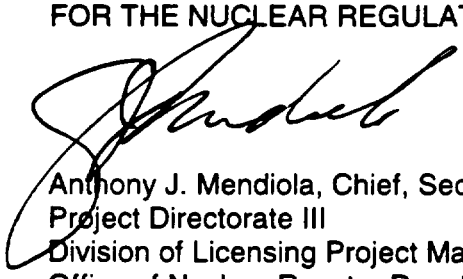
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-19 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 181 , 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 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 2000

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. 176
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 February 18, 2000, 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.

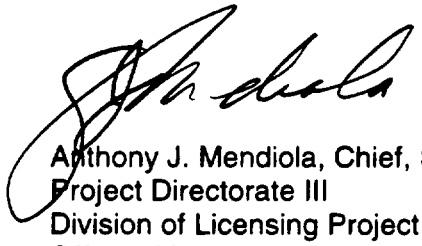
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 176 , 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 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 27, 2000

ATTACHMENT TO LICENSE AMENDMENT NOS. 181 AND 176

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

DOCKET NOS. 50-237 AND 50-249

Revise the Appendix "A" Technical Specifications by replacing the pages identified below with the attached pages. The revised pages are identified by amendment number and contain a vertical line in the margin indicating the area of change.

REMOVE	INSERT
2-5	2-5
B 2-9	B 2-9
B 2-10	B 2-10
3/4.1-3	3/4.1-3
3/4.1-8	3/4.1-8
B 3/4.1-2	B 3/4.1-2

TABLE 2.2.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

Functional Unit	Trip Setpoint
7. Drywell Pressure - High	≤2 psig
8. Scram Discharge Volume Water Level - High	≤40.4 gallons (Unit 2) ≤41 gallons (Unit 3)
9. Turbine Stop Valve - Closure	≤10% closed
10. Deleted	
11. Turbine Control Valve Fast Closure	≥460 psig EHC fluid pressure
12. Turbine Condenser Vacuum - Low	≥21 inches Hg vacuum
13. Reactor Mode Switch Shutdown Position	NA
14. Manual Scram	NA

7. Drywell Pressure - High

High pressure in the drywell could indicate a break in the primary pressure boundary systems or a loss of drywell cooling. Therefore, pressure sensing instrumentation is provided as a backup to the water level instrumentation. The reactor is scrammed on high pressure in order to minimize the possibility of fuel damage and reduce the amount of energy being added to the coolant and the primary containment. The scram setting was selected as low as possible without causing spurious scrams.

8. Scram Discharge Volume Water Level - High

The control rod drive scram system is designed so that all of the water which is discharged from the reactor by a scram can be accommodated in the discharge piping. A part of this system is an individual instrument volume for each of the scram discharge volumes. These two instrument volumes and their piping can hold in excess of 90 gallons of water and are the low point in the piping. No credit was taken for the instrument volumes in the design of the discharge piping relative to the amount of water which must be accommodated during a scram. During normal operations, the scram discharge volumes are empty; however, should either scram discharge volume accumulate water, the water discharged to the piping from the reactor during a scram may not be accommodated which could result in slow scram times or partial or no control rod insertion. To preclude this occurrence, level switches have been installed in both instrument volumes which will alarm and scram the reactor while sufficient volume remains to accommodate the discharged water. Diverse level sensing methods have been incorporated into the design and logic of the system to prevent common mode failure. The setting for this anticipatory scram signal has been chosen on the basis of providing sufficient volume remaining to accommodate a scram, even with 5 gpm leakage per drive into the scram discharge volume. As indicated above, there is sufficient volume in the piping to accommodate the scram without impairment of the scram times or the amount of insertion of the control rods.

9. Turbine Stop Valve - Closure

The turbine stop valve closure scram setting anticipates the pressure, neutron flux, and heat flux increase that could result from rapid closure of the turbine stop valves. With a scram setting of 10% of valve closure from full open, the resultant increase in surface heat flux is limited such that MCPR remains above the fuel cladding integrity Safety Limit, even during the worst-case transient that assumes the turbine bypass fails to operate.

10. Deleted

11. Turbine Control Valve Fast Closure

The turbine control valve fast closure scram is provided to anticipate the rapid increase in pressure and neutron flux resulting from fast closure of the turbine control valves due to a load rejection and subsequent failure of the bypass valves; i.e., MCPR remains above the fuel cladding integrity Safety Limit for this transient. For the load rejection without bypass transient from 100% power, the peak heat flux (and therefore LHGR) increases on the order of 15% which provides a wide margin to the value corresponding to 1% plastic strain of the cladding.

The scram setting based on EHC fluid pressure was developed to ensure that the pressure switch is actuated prior to the closure of the turbine control valves (at approximately 400 psig EHC fluid pressure), yet assure that the system is not actuated unnecessarily due to EHC system pressure transients which may cause EHC system pressure to momentarily decrease.

12. Turbine Condenser Vacuum - Low

Loss of condenser vacuum occurs when the condenser can no longer handle the heat input. Loss of condenser vacuum initiates a closure of the turbine stop valves and turbine bypass valves which eliminates the heat input to the condenser. Closure of the turbine stop and bypass valves causes a pressure transient, neutron flux rise and an increase in surface heat flux. To prevent the fuel cladding integrity Safety Limit from being exceeded if this occurs, a reactor scram occurs on turbine stop valve closure. The turbine stop valve closure scram function alone is adequate to prevent the fuel cladding integrity Safety Limit from being exceeded, in the event of a turbine trip transient with bypass closure. The condenser low vacuum scram is anticipatory to the stop valve closure scram and causes a scram before the stop valves (and bypass valves) are closed and thus, the resulting transient is less severe.

TABLE 3.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Functional Unit		Applicable OPERATIONAL MODE(s)	Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM[a]	ACTION
5.	Main Steam Line Isolation Valve - Closure	1, 2[i]	4	10
6.	Deleted			
7.	Drywell Pressure - High	1, 2[h]	2	11
8.	Scram Discharge Volume Water Level - High			
	a. ΔP Switch, and	1, 2 5[b,i]	2 2	11 13
	b. Thermal Switch (Unit 2), or Float Switch (Unit 3)	1, 2 5[b,i]	2 2	11 13
9.	Turbine Stop Valve - Closure	1[d]	4	16
10.	Deleted			
11.	Turbine Control Valve Fast Closure	1[d]	2	16
12.	Turbine Condenser Vacuum - Low	1, 2[j]	2	10

TABLE 4.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	Functional Unit	Applicable OPERATIONAL MODES	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL[a] CALIBRATION
8.	Scram Discharge Volume Water Level - High				
	a. ΔP Switch, and	1, 2, 5[j,k]	NA	Q	E
	b. Thermal Switch (Unit 2), or Float Switch (Unit 3)	1, 2, 5[j,k]	NA	Q	NA
9.	Turbine Stop Valve - Closure	1[l]	NA	Q	E
10.	Deleted				
11.	Turbine Control Valve Fast Closure	1[l]	NA	Q	E
12.	Turbine Condenser Vacuum - Low	1, 2[p]	NA	M	M
13.	Reactor Mode Switch Shutdown Position	1, 2, 3, 4, 5	NA	E	NA
14.	Manual Scram	1, 2, 3, 4, 5	NA	M	NA

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 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

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NO. DPR-19

AND AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. DPR-25

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

By letter dated February 18, 2000, Commonwealth Edison Company (ComEd, the licensee), proposed changes to the Dresden, Units 2 and 3, Technical Specifications (TS) to delete the "Turbine Electro-Hydraulic Control (EHC) Control Oil Pressure - Low" trip from TS Table 2.2.A-1, "Reactor Protection System Instrumentation Setpoints," Table 3.1.A-1, "Reactor Protection System Instrumentation," and Table 4.1.A-1, "Reactor Protection System Instrumentation Surveillance Requirements." The licensee's submittal provided description, Bases, and safety analysis to justify the proposed changes. The following is the staff's evaluation of the licensee's justification of the proposed changes.

2.0 EVALUATION

The EHC system provides cooled, filtered, high pressure oil for the control of the turbine valves and trip functions for the main turbine. A loss of oil pressure could result in a rapid insertion (i.e., fast closure) of the turbine control valves. During operating conditions, a fast closure of the turbine control valves causes a pressure transient, which can cause reactor power (i.e., neutron flux) to increase rapidly. In the original design, the control valve fast closure scram function used limit switches that detected the actuation of the fast acting solenoid valve and provided direct reactor trip on the turbine control valve fast closure. However, the loss of EHC control oil event was not originally protected by turbine control valve fast closure scram function. In response to this design, the licensee added the subject EHC Control Oil Pressure-Low reactor trip instrumentation to provide an anticipatory reactor trip in the early 1970s. This trip function anticipates the pressure transient due to the fast closure of the turbine control valves and initiates an anticipatory reactor trip before any significant increase in neutron flux causes reactor power increase.

In the late 1980's, the licensee implemented a design change that replaced the turbine control valve direct scram on fast acting solenoid actuation with a pressure switch on each control valve. The fast acting solenoid valves use EHC oil pressure-low instrumentation signal, instead of solenoid valve limit switches to initiate reactor trip on turbine control valve fast closure. This

change of a trip signal was recommended by General Electric for upgrading the fast acting solenoid valves. This change was accepted for Dresden, Units 2 and 3, by Amendment number 115/112, dated June 29, 1992. This modified scram function (i.e., Turbine Control Valve Fast Closure) is redundant to the Turbine EHC Control Oil Pressure Low scram function during a postulated loss of EHC control oil event. Additionally, the General Electric Standard Technical Specifications do not include Turbine EHC Control Oil Pressure - Low instrumentation for reactor scram on a loss of EHC control oil pressure. The staff has, therefore, determined that the "Turbine EHC Control Oil Pressure - Low" trip does not meet the criteria of 10 CFR 50.36 for inclusion in TS. The "Turbine EHC Control Oil Pressure - Low" requirements contained in item ten of TS Tables 2.2.A-1, 3.1.A-1, and 4.1.A-1 can, therefore, be deleted. The staff used Quad Cities Amendments 193 and 189, dated January 28, 2000, as a precedence for this licensing action. Also, the staff has no comments on the TS Bases changes.

Based on the above evaluation, the staff concludes that the licensee's proposed Technical Specification changes are acceptable.

3.0 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.

4.0 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 (65 FR 17910). 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.

5.0 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: N. Trehan, EEIB

Date: September 27, 2000