

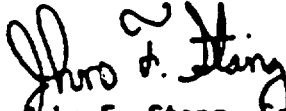


I. Johnson

- 2 -

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,



John F. Stang, Senior Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosures: 1. Amendment No. 163 to DPR-19  
2. Amendment No. 158 to DPR-25  
3. Safety Evaluation

cc w/encl: see next page

I. Johnson

- 2 -

October 24, 1997

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,

ORIGINAL SIGNED BY

John F. Stang, Senior Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosures: 1. Amendment No. 163 to DPR-19  
2. Amendment No. 158 to DPR-25  
3. Safety Evaluation

cc w/encl: see next page

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**I. Johnson  
Commonwealth Edison Company**

**Dresden Nuclear Power Station  
Unit Nos. 2 and 3**

**cc:**

**Michael I. Miller, Esquire  
Sidley and Austin  
One First National Plaza  
Chicago, Illinois 60603**

**Site Vice President  
Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, Illinois 60450-9765**

**Station Manager  
Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, Illinois 60450-9765**

**U.S. Nuclear Regulatory Commission  
Resident Inspectors Office  
Dresden Station  
6500 North Dresden Road  
Morris, Illinois 60450-9766**

**Regional Administrator  
U.S. NRC, Region III  
801 Warrenville Road  
Lisle, Illinois 60532-4351**

**Illinois Department of Nuclear Safety  
Office of Nuclear Facility Safety  
1035 Outer Park Drive  
Springfield, Illinois 62704**

**Chairman  
Grundy County Board  
Administration Building  
1320 Union Street  
Morris, Illinois 60450**

**Document Control Desk-Licensing  
Commonwealth Edison Company  
1400 Opus Place, Suite 400  
Downers Grove, Illinois 60515**



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. 163  
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 March 5, 1997, as supplemented October 3, 1997, 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 paragraphs 2.C.(2) and 2.C.(7) of Facility Operating License No. DPR-19 are hereby amended to read as follows:

2.C.(2) Technical Specifications

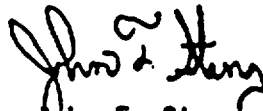
The Technical Specifications contained in Appendix A, as revised through Amendment No. 163, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

2.C.(7) Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 163 are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stang, Senior Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachments:

1. Appendix B
2. Changes to the Technical Specifications

Date of Issuance: October 24, 1997

APPENDIX B

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. DRP-19

Commonwealth Edison Company shall comply with the following conditions on the schedules noted below:

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>										
157	<p>The license is amended to authorize changing the UFSAR to allow credit for containment overpressure as detailed below, to assure adequate Net Positive Suction Head is available for low pressure Emergency Core Cooling System pumps following a design basis accident.</p> <table><tr><th><u>Time (seconds)</u></th><th><u>Containment Pressure (PSIG)</u></th></tr><tr><td>0-240</td><td>9.5</td></tr><tr><td>240-480</td><td>2.9</td></tr><tr><td>480-6000</td><td>1.9</td></tr><tr><td>6000-accident end</td><td>2.5</td></tr></table>	<u>Time (seconds)</u>	<u>Containment Pressure (PSIG)</u>	0-240	9.5	240-480	2.9	480-6000	1.9	6000-accident end	2.5	<p>Effective as of the issuance of Amendment No. 157 and shall be implemented within 30 days.</p>
<u>Time (seconds)</u>	<u>Containment Pressure (PSIG)</u>											
0-240	9.5											
240-480	2.9											
480-6000	1.9											
6000-accident end	2.5											
157	<p>The EOPs shall be changed to alert operator to NPSH concerns and to make containment spray operation consistent with the overpressure requirements for NPSH.</p>	<p>Shall be implemented within 30 days after issuance of Amendment No. 157.</p>										
160	<p>This amendment authorizes the licensee to incorporate in the Updated Final Safety Analysis Report (UFSAR), the description of the Reactor Coolant System design pressure, temperature and volume that was removed from Technical Specification Section 5.4, and evaluated in a safety evaluation dated June 12, 1997.</p>	<p>30 days from the date of issuance of Amendment No. 160.</p>										
163	<p>The licensee shall review the Dresden Operation Annunciator and General Abnormal Conditions Procedures and revise them as required to ensure operator action is taken in a timely manner to limit occupational doses and environmental releases.</p>	<p>60 days from the date of issuance of Amendment No. 163</p>										

Amendment No. 163

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
163	The licensee shall change the setpoints for the Main Steamline Radiation Monitor and Offgas System Radiation Monitor alarms to 1.5 times the normal full power M-16 background (with hydrogen addition) dose rates.	60 days from the date of issuance of Amendment No. 163





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20585-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 158  
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 March 5, 1997, as supplemented October 3, 1997, 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 paragraphs 3.B. and 3.O. of Facility Operating License No. DPR-25 are hereby amended to read as follows:

**3.B. Technical Specifications**

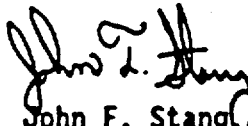
The Technical Specifications contained in Appendix A, as revised through Amendment No. 158, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

**3.O. Additional Conditions**

The Additional Conditions contained in Appendix B, as revised through Amendment No. 158, are hereby incorporated into this license. Commonwealth Edison Company shall operate the facility in accordance with the Additional Conditions.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stang, Senior Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

**Attachments:**

1. Appendix B
2. Changes to the Technical Specifications

Date of Issuance: October 24, 1997

APPENDIX B

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. DRP-25

Commonwealth Edison Company shall comply with the following conditions on the schedules noted below:

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>										
152	The license is amended to authorize changing the UFSAR to allow credit for containment overpressure as detailed below, to assure adequate Net Positive Suction Head is available for low pressure Emergency Core Cooling System pumps following a design basis accident.  <table><tr><td><u>Time (seconds)</u></td><td><u>Containment Pressure (PSIG)</u></td></tr><tr><td>0-240</td><td>9.5</td></tr><tr><td>240-480</td><td>2.9</td></tr><tr><td>480-6000</td><td>1.9</td></tr><tr><td>6000-accident end</td><td>2.5</td></tr></table>	<u>Time (seconds)</u>	<u>Containment Pressure (PSIG)</u>	0-240	9.5	240-480	2.9	480-6000	1.9	6000-accident end	2.5	Prior to Unit 3 returning to Mode 3 from refueling outage D3R14.
<u>Time (seconds)</u>	<u>Containment Pressure (PSIG)</u>											
0-240	9.5											
240-480	2.9											
480-6000	1.9											
6000-accident end	2.5											
152	The licensee shall complete the evaluation of the torus attached piping.	Prior to Unit 3 returning to Mode 3 from refueling outage D3R14.										
152	The EOPs shall be changed to alert operator to NPSH concerns and to make containment spray operation consistent with the overpressure requirements for NPSH.	Shall be implemented within 30 days after issuance of Amendment No. 152.										
155	This amendment authorizes the licensee to incorporate in the Updated Final Safety Analysis Report (UFSAR), the description of the Reactor Coolant System design pressure, temperature and volume that was removed from Technical Specification Section 5.4, and evaluated in a safety evaluation dated June 12, 1997.	30 days from the date of issuance of Amendment No. 155										

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
158	The licensee shall review the Dresden Operation Annunciator and General Abnormal Conditions Procedures and revise them as required to ensure operator action is taken in a timely manner to limit occupational doses and environmental releases.	60 days from the date of issuance of Amendment No. 158
158	The licensee shall change the set points for the Main Steam Line Radiation Monitor and Offgas System Radiation Monitor alarms to 1.5 times the normal full power N-16 background (with hydrogen addition) dose rates.	60 days from the date of issuance of Amendment No. 158

ATTACHMENT TO LICENSE AMENDMENT NOS. 163 AND 158

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

2-4

B 2-8

3/4.1-3

3/4.1-5

3/4.1-7

3/4.1-10

3/4.2-3

3/4.2-7

3/4.2-8

3/4.2-10

INSERT

2-4

B 2-8

3/4.1-3

3/4.1-5

3/4.1-7

3/4.1-10

3/4.2-3

3/4.2-7

3/4.2-8

3/4.2-10

TABLE 2.2.A-1REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

<u>Functional Unit</u>	<u>Trip Setpoint</u>
1. Intermediate Range Monitor:	
a. Neutron Flux - High	$\leq 120/125$ divisions of full scale
b. Inoperative	NA
2. Average Power Range Monitor:	
a. Setdown Neutron Flux - High	$\leq 15\%$ of RATED THERMAL POWER
b. Flow Biased Neutron Flux - High	
1) Dual Recirculation Loop Operation	
a) Flow Biased	$\leq 0.58W^{tm} + 62\%$ , with a maximum of
b) High Flow Maximum	$\leq 120\%$ of RATED THERMAL POWER
2) Single Recirculation Loop Operation	
a) Flow Biased	$\leq 0.58W^{tm} + 58.5\%$ , with a maximum of
b) High Flow Maximum	$\leq 116.5\%$ of RATED THERMAL POWER
c. Fixed Neutron Flux - High	$\leq 120\%$ of RATED THERMAL POWER
d. Inoperative	NA
3. Reactor Vessel Steam Dome Pressure - High	$\leq 1060$ psig
4. Reactor Vessel Water Level - Low	$\geq 144$ inches above top of active fuel <sup>tm</sup>
5. Main Steam Line Isolation Valve - Closure	$\leq 10\%$ closed
6. Deleted	

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a W shall be the recirculation loop flow expressed as a percentage of the recirculation loop flow which produces a rated core flow of 98 million lbs/hr.

b The top of active fuel is defined to be 360 inches above vessel zero.

**BASES**

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decrease as power is increased to 100% in comparison to the level outside the shroud, to a maximum of seven inches, due to the pressure drop across the steam dryer. Therefore, at 100% power, an indicated water level of +8 inches water level may be as low as +1 inches inside the shroud which corresponds to 144 inches above the top of active fuel and 504 inches above vessel zero. The top of active fuel is defined to be 360 inches above vessel zero.

5. Main Steam Line Isolation Valve - Closure

Automatic isolation of the main steam lines is provided to give protection against rapid reactor depressurization and cooldown of the vessel. When the main steam line isolation valves begin to close, a scram signal provides for reactor shutdown so that high power operation at low reactor pressures does not occur. With the scram setting at 10% valve closure (from full open), there is no appreciable increase in neutron flux during normal or inadvertent isolation valve closure, thus providing protection for the fuel cladding integrity safety limit. Operation of the reactor at pressures lower than the MSIV closure setting requires the reactor mode switch to be in the Startup/Hot Standby position, where protection of the fuel cladding integrity safety limit is provided by the IRM and APRM high neutron flux scram signals. Thus, the combination of main steam line low pressure isolation and the isolation valve closure scram with the mode switch in the Run position assures the availability of the neutron flux scram protection over the entire range of applicability of fuel cladding integrity safety limit.

6. Deleted

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

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

DRESDEN - UNITS 2 & 3

3/4.1-3

Amendment Nos. 163, 158



**TABLE 3.1.A-1 (Continued)****REACTOR PROTECTION SYSTEM INSTRUMENTATION****ACTION**

- ACTION 10 -** Be in at least STARTUP with reactor pressure less than 600 psig within 8 hours.
- ACTION 11 -** Be in at least HOT SHUTDOWN within 12 hours.
- ACTION 12 -** Verify all insertable control rods to be fully inserted in the core and lock the reactor mode switch in the Shutdown position within one hour.
- ACTION 13 -** Suspend all operations involving CORE ALTERATIONS, and fully insert all insertable control rods within one hour. If SRM instrumentation is not OPERABLE per Specification 3.10.B, also suspend replacement of LPRMs.
- ACTION 14 -** Be in at least STARTUP within 8 hours.
- ACTION 15 -** Deleted
- ACTION 16 -** Initiate a reduction in THERMAL POWER within 15 minutes and reduce reactor power to less than 45% of RATED THERMAL POWER within 2 hours.
- ACTION 17 -** Verify all insertable control rods to be fully inserted in the core within one hour.
- ACTION 18 -** Lock the reactor mode switch in the Shutdown position within one hour.
- ACTION 19 -** Suspend all operations involving CORE ALTERATIONS, and fully insert all insertable control rods and lock the reactor mode switch in the Shutdown position within one hour. If SRM instrumentation is not OPERABLE per Specification 3.10.B, also suspend replacement of LPRMs.

TABLE 4.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Functional Unit</u>	<u>Applicable OPERATIONAL MODES</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL<sup>m</sup> CALIBRATION</u>
1. Intermediate Range Monitor:				
a. Neutron Flux - High	2 3, 4, 5	S <sup>2a</sup> S	S/U <sup>2a</sup> W <sup>2a</sup> W <sup>2a</sup>	E <sup>2a</sup> E <sup>2a</sup>
b. Inoperative	2, 3, 4, 5	NA	W <sup>2a</sup>	NA
2. Average Power Range Monitor <sup>m</sup> :				
a. Setdown Neutron Flux - High	2 3, 5 <sup>m</sup>	S <sup>2a</sup> S	S/U <sup>2a</sup> W <sup>2a</sup> W <sup>2a</sup>	SA <sup>2a</sup> SA <sup>2a</sup>
b. Flow Biased Neutron Flux - High	1	S, D	W	W <sup>2a, m</sup> , SA
c. Fixed Neutron Flux - High	1	S	W	W <sup>2a</sup> , SA
d. Inoperative	1, 2, 3, 5 <sup>m</sup>	NA	W	NA
3. Reactor Vessel Steam Dome Pressure - High	1, 2 <sup>a</sup>	NA	M	Q
4. Reactor Vessel Water Level - Low	1, 2	D	M	E <sup>2a</sup>
5. Main Steam Line Isolation Valve - Closure	1, 2 <sup>2a</sup>	NA	M	E
6. Deleted				
7. Drywell Pressure - High	1, 2 <sup>2a</sup>	NA	M	Q

**TABLE 4.1.A-1 (Continued)****REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

- (l) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.
- (m) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.
- (n) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (o) The provisions of Specification 4.0.D are not applicable to the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION surveillances for a period of 24 hours after entering OPERATIONAL MODE 2 or 3 when shutting down from OPERATIONAL MODE 1.
- (p) This function is not required to be OPERABLE when reactor pressure is less than 600 psig.
- (q) Delete

**TABLE 3.2.A-1**  
**ISOLATION ACTUATION INSTRUMENTATION**

<u>Functional Unit</u>	<u>Trip Setpoint<sup>kl</sup></u>	<u>Minimum CHANNEL(s) per TRIP SYSTEM<sup>kl</sup></u>	<u>Applicable OPERATIONAL MODE(s)</u>	<u>ACTION</u>
<b>1. PRIMARY CONTAINMENT ISOLATION</b>				
a. Reactor Vessel Water Level - Low	≥ 144 inches	2	1, 2, 3	20
b. Drywell Pressure - High <sup>kl</sup>	≤ 2 psig	2	1, 2, 3	20
c. Drywell Radiation - High	≤ 100 R/hr	1	1, 2, 3	23
<b>2. SECONDARY CONTAINMENT ISOLATION</b>				
a. Reactor Vessel Water Level - Low <sup>kl</sup>	≥ 144 inches	2	1, 2, 3 & *	24
b. Drywell Pressure - High <sup>kl, a</sup>	≤ 2 psig	2	1, 2, 3	24
c. Reactor Building Ventilation Exhaust Radiation - High <sup>kl</sup>	≤ 10 mR/hr	2	1, 2, 3 & * *	24
d. Refuelling Floor Radiation - High <sup>kl</sup>	≤ 100 mR/hr	2	1, 2, 3 & * *	24
<b>3. MAIN STEAM LINE (MSL) ISOLATION</b>				
a. Reactor Vessel Water Level - Low Low	≥ 84 inches	2	1, 2, 3	21
b. Deleted				
c. MSL Pressure - Low	≥ 825 psig	2	1	22
d. MSL Flow - High	≤ 120% of rated	2/line	1, 2, 3	21
e. MSL Tunnel Temperature - High	≤ 200°F	2 of 4 in each of 2 sets	1, 2, 3	21

**TABLE 3.2.A-1 (Continued)****ISOLATION ACTUATION INSTRUMENTATION****TABLE NOTATION**

- During CORE ALTERATIONS or operations with a potential for draining the reactor vessel.
- When handling irradiated fuel in the secondary containment.
- (a) A CHANNEL may be placed in an inoperable status for up to 2 hours for required surveillance without placing the CHANNEL in the tripped condition provided the Functional Unit maintains isolation actuation capability.
- (b) Deleted
- (c) Isolates the reactor building ventilation system and actuates the standby gas treatment system.
- (d) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (e) Only one TRIP SYSTEM.
- (f) Closes only reactor water cleanup system isolation valves.
- (g) Deleted
- (h) Includes a time delay of  $3 \leq t \leq 9$  seconds.
- (i) Reactor vessel water level settings are expressed in inches above the top of active fuel (which is 360 inches above vessel zero).
- (j) All four switches in either of 2 groups for each trip system.

TABLE 4.2.A-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Functional Unit</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>Applicable OPERATIONAL MODE(s)</u>
<b>1. <u>PRIMARY CONTAINMENT ISOLATION</u></b>				
a. Reactor Vessel Water Level - Low	S	M	E <sup>M</sup>	1, 2, 3
b. Drywell Pressure - High <sup>M</sup>	NA	M	Q	1, 2, 3
c. Drywell Radiation - High	S	M	E	1, 2, 3
<b>2. <u>SECONDARY CONTAINMENT ISOLATION</u></b>				
a. Reactor Vessel Water Level - Low <sup>M</sup>	S	M	E <sup>M</sup>	1, 2, 3 & *
b. Drywell Pressure - High <sup>M,d</sup>	NA	M	Q	1, 2, 3
c. Reactor Building Ventilation Exhaust Radiation - High <sup>M</sup>	S	M	Q	1, 2, 3 & **
d. Refueling Floor Radiation - High <sup>M</sup>	S	M	Q	1, 2, 3 & **
<b>3. <u>MAIN STEAM LINE (MSL) ISOLATION</u></b>				
a. Reactor Vessel Water Level - Low Low	S	M	E <sup>M</sup>	1, 2, 3
b. Deleted				
c. MSL Pressure - Low	NA	M	Q	1
d. MSL Flow - High	S	M	E	1, 2, 3
e. MSL Tunnel Temperature - High	NA	E	E	1, 2, 3

**TABLE 4.2.A-1 (Continued)****ISOLATION ACTUATION INSTRUMENTATION  
SURVEILLANCE REQUIREMENTS****TABLE NOTATION**

- During CORE ALTERATIONS or operations with a potential for draining the reactor vessel.
- When handling irradiated fuel in the secondary containment.
- (a) Trip units are calibrated at least once per 31 days and transmitters are calibrated at the frequency identified in the table.
- (b) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (c) Isolates the reactor building ventilation system and actuates the standby gas treatment system.
- (d) Deleted



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20545-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NO. DPR-19  
AND AMENDMENT NO. 158 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 March 5, 1997, as supplemented October 3, 1997, Commonwealth Edison Company (ComEd, the licensee), submitted a license amendment to revise the Technical Specifications (TS) to remove the main steamline radiation monitor (MSLRM) - high reactor scram and the main steamline tunnel radiation - high input to the main steamline isolation function. The proposed changes are a result of the Boiling Water Reactor Owners Group (BWROG) initiative to minimize inadvertent scrams and Main Steam Isolation Valve closure due to erroneous radiation monitor actuation. The licensee referenced the licensing topical report NEDO-31400<sup>1</sup> and provided supporting information as well as a description of the proposed changes and bases for their acceptability. The licensee's proposed changes are based on the October 1981 BWR Owners' Group Licensing Topical Report NEDO-31400 and NUREG-0800<sup>2</sup>.

The licensee states that elimination of this trip function would result in reduced potential for unnecessary reactor shutdowns caused by spurious MSLRM trips and would increase plant operational flexibility without compromising plant safety.

In NEDO-31400, a reevaluation of the role of the MSLRM in the control rod drop accident (CRDA) analysis was performed, confirming that removal of the MSLRM scram/isolation features would not compromise CRDA consequences. The topical report also evaluated the potential effect on occupational exposure in the event of a sudden release of radioactive material from the fuel and concluded that the elimination of the scram/isolation features would have no adverse effect.

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<sup>1</sup> NEDO-31400A, "Safety Evaluation for Eliminating the Boiling Water Reactor Main Steam Line Isolation Valve Closure Function and Scram Function of the Main Steam Radiation Monitor".

<sup>2</sup> NUREG-0800, Standard Review Plan (SRP) 15.4.9, Revision 2, July 1981.



Specifically, the licensee proposed the following changes for Units 2 and 3:

1. Table 2.2.A-1, (Reactor Protection System Instrumentation Setpoints) - Delete setpoint requirements for "Main Steam Line Radiation -High" (i.e., Item 6 and note (c).
2. Bases 2.2.A (Limiting Safety System Bases)- Delete reference to "Main Steam Line Radiation -High." (i.e., Item 6).
3. Table 3.1.A-1 (Reactor Protection System Instrumentation)- Delete paragraph "Main Steam Line Radiation - High" (i.e., Item 6 and Action 15).
4. Table 4.1.A-1 (Reactor Protection System Instrumentation Surveillance Requirements)- Delete reference to "Main Steam Line Radiation - High" (i.e., Item 6 and note (q)).
5. Table 3.2.A-1 (Isolation Actuation Instrumentation) - Delete action statement reference to Main Steam Line Tunnel Radiation- High (i.e., Item 3.b, note (b) and note (g).
6. Table 4.2.A-1 (Isolation Actuation Instrumentation Surveillance Requirements)- Delete Item 3.b, and note (d).

By letter dated October 3, 1997, ComEd provided additional information concerning the proposed amendment. The additional information provided by ComEd did not change the initial proposed no significant hazards consideration determination.

## 2.0 EVALUATION

The licensee referenced General Electric (GE) Topical Report NEDO-31400 in support of its request to eliminate the MSLRM scram and group isolation functions. In the topical report, GE analyzes a CRDA where the main steamline high radiation isolation is eliminated. The resulting radiological exposures are small fractions of 10 CFR Part 100 limits. The topical report received staff approval in a safety evaluation (SE) dated May 15, 1991<sup>3</sup>.

The MSLRM consists of ionization chambers that monitor for gamma radiation at points external to the main steamlines. In the event of a high radiation level, which is indicative of fuel failure, the MSLRM provides a scram signal and a close signal to the Main Steam Isolation Valves (MSIV) and other Group I isolation valves. The MSLRM was designed to provide an early indication of gross fuel cladding failures. The original intent of this monitor was to mitigate the releases of the detected fuel failure by measuring gross gamma radiation from the main steamlines downstream of the outboard MSIV. These

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<sup>3</sup> Memorandum from R. W. Houston to W. T. Russel, "SEP Review of Dresden-2," December 14, 1981.

scram and isolation signals limit releases to the environment and mitigate the radiological effects of the fuel cladding during a CRDA to well within the limits of 10 CFR 100.11.

The only design basis accident in which either the MSLRM scram or MSIV isolation functions are taken into consideration is the CRDA. To be consistent with Section 15.4.9 of the Standard Review Plan (SRP), all of the postulated radioactive material is assumed to be released to the condenser and turbine before the isolation occurs. Hence, the automatic isolation resulting from the MSLRM signal provides no benefits, since the resultant dose consequences from the control rod accident will remain unchanged. However, for Dresden, the dose analysis does rely on the operator tripping the mechanical vacuum pumps within 15 minutes after receiving the high-high alarm from the MSLRM.

In a May 15, 1991, Safety Evaluation (SE) on NEDO-31400A, the staff concluded that removal of the MSLRM trips that automatically shut down the reactor and close the MSIV was acceptable and that Licensing Topical Report, NEDO-31400A, may be referenced in support of an amendment request as long as the following three conditions were met:

1. The applicant demonstrates that the assumptions with regard to input values (including power per assembly, X/Q, and decay times) that are made in generic analysis bound those for the plant,

The licensee provided a comparison of the key input parameters and the dose assessment assumptions between the Dresden design basis and the NEDO-31400A analysis assumptions. The comparison shows that on an overall basis, the Dresden dose analysis is bounded by the NEDO-31400 analysis. The licensee's analyses calculated the doses for the 0-2 hour to the exclusion area boundary (EAB) to be 0.91 rem to the thyroid and 0.07 rem to the thyroid for the low population zone (LPZ). These doses are well within the SRP acceptance criteria of 10% of the values in 10 CFR 100.11 or 30 rem for the thyroid dose. The NEDO analysis did not include consideration of the open drain and sample lines; however, their contribution to the overall dose analysis is insignificant.

By letter dated October 3, 1997, the licensee provided additional information concerning the assumption with regard to input values used in the Dresden plant-specific evaluation, for power per assembly and decay times. The licensee stated in the letter that the specific values used in the Dresden analysis for power per assembly and decay times are bounded by the generic analysis.

The turbine gland seal condenser release path was analyzed by the licensee. This release path is specific to Dresden Station and was not considered in the BWROG NEDO-31400A analysis, and was analyzed as an additional release path not automatically isolated during a CRDA. For the turbine gland seal condenser path, all the noble gases and iodine reaching the gland seal condenser are assumed to be released to the environment. This assumption is conservative

with respect to the iodine since no washout and plate out is assumed. The release from the turbine gland seal condenser is conservatively treated as a ground level release, even though it discharges through the plant stack. The calculated doses from the turbine gland seal condenser were added to the thyroid and whole body doses calculated for each of the two scenarios, and the resulting total releases were well within the limits of 10 CFR 100.11.

The staff finds that the licensee's analysis compares favorable with its evaluation and meets the applicable requirements of Condition 1 and is, therefore, acceptable.

2. The applicant includes evidence (implemented or proposed operating procedures, or equivalent commitments) to provide reasonable assurance that increased significant levels of radioactive material in the main steamlines will be controlled expeditiously to limit both occupational doses and environmental releases, and

In the response to Condition 2, the licensee has in place the Offsite Dose Calculation Manual (ODCM), a Radiation Protection Program, including an as low as reasonably achievable (ALARA) program, and a Radiological Environmental Monitoring Program. Existing procedures for responding to high radiation alarms from MSLRM and offgas initiate actions through Emergency Operating Procedures (EOP) which ensure that significant levels of radiation in the main steamlines (MSL) are controlled expeditiously to limit both occupational doses and environmental releases. Dresden's radiation protection, chemistry operating, EOP and the ODCM will be revised as necessary to incorporate specific considerations to change isolation of the main steamlines from an automatic to a manual function. Thus, any significant increase in the levels of radioactivity in the MSL will continue to be promptly controlled to limit effluent releases and on-site occupational exposure.

The licensee has committed to review the Dresden Operation Annunciator and General Abnormal Conditions Procedures and revise them as required to ensure operator action to limit occupational doses and environmental releases prior to implementation of the proposed amendment. The commitment has also been included in Appendix B to the license. Based on a review of the licensee's commitment, the staff has determined that Condition 2 has been satisfied.

3. The applicant standardizes the MSLRM and offgas radiation monitor alarm setpoint at 1.5 times the nominal nitrogen-16 (N-16) background dose rate at the monitor locations, and commits to promptly sample the reactor coolant to determine possible contamination levels in the plant reactor coolant and the need for additional corrective actions, if either the MSLRM or offgas radiation monitors or both exceed their alarm setpoint.

In response to Condition 3, the licensee has committed to change the setpoints for the MSLRM and offgas radiation monitor alarms to 1.5 times the normal full power N-16 background (with hydrogen addition) dose rates prior to implementation of the amendment. This commitment has also been included in

Appendix B of the license. Either of these alarms will trigger entry into a procedure which will require a reactor coolant sample to be obtained and analyzed. The offgas radiation monitor alarm is also set to help ensure that effluents are maintained ALARA in accordance with the ODCM. Based on a review of the licensee's commitment, the staff has determined that Condition 3 has been satisfied.

The staff performed an independent analysis to determine plant conformance with the criteria that the CRDA is expected to result in radiological consequences less than 10% of the part 100 guidelines even with conservative assumptions. In its analysis the staff utilized the assumptions contained in SRP Section 15.4.9. The staff computed the offsite doses for Dresden Unit 2 and 3 using the assumptions described in Table 1 and NRC's ACTICODE computer code. The resulting CRDA calculated values are listed below.

ASSUMPTIONS USED FOR CALCULATION RADIOLOGICAL CONSEQUENCES

Parameters

Power Level	2561
Number of Rods Perforated	850
Number of Rods Melted	0
Number of Rods In-Core	45612
Power Peaking Factor	1.5
Condenser Leak Rates (%) day	1.0

Fraction of fission product inventory release to coolant:

Iodines, percent	50
Noble gases, percent	100

Receptor Point Variables

Exclusion Area Boundary (EAB)

Atmosphere Relative Concentration, X/Q (sec/m <sup>3</sup> )	
0-2 hours	2.6E-4

Low Population Zone (LPZ)

Atmosphere Relative Concentration, X/Q (sec/m <sup>3</sup> )	
0-8 hours	1.1E-5

Thyroid Doses

EAB-	0.26 rem
LPZ-	0.41 rem

Based on the review of the licensee's application and safety analysis, the staff concludes that there are no adverse safety implications associated with removal of the MSLRM scram and MSIV closure function since the licensee has provided reasonable assurance that the offsite radiation exposure levels are within the acceptance criteria of Section 15.4.9. of the SRP and well within the 10 CFR Part 100 guidelines. The staff concludes that the proposed changes

to eliminate the reactor scram and MSIV isolation requirements associated with the MSLRM 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 (62 FR 19141). 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: J. Minns  
G. Golub

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