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Docket Nos. 50-237, 50-249

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

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 16 and 14 to Facility License Nos. DPR-19 and DPR-25 for the Dresden Nuclear Power Station Units 2 and 3, respectively. The amendments consist of changes in the Technical Specifications and are in response to your request dated December 3, 1974, as supported by filings dated February 18, 1975 and September 16, 1975.

The amendments consist of changes in the Technical Specifications that add interim surveillance requirements to assure the integrity of certain high energy lines outside containment. The requirements are intended to remain in effect only until modifications which would acceptably mitigate the effects of postulated high energy line breaks outside containment have been completed.

Your proposed schedule for completion of the modifications as described in your letter of October 21, 1975, is acceptable.

Copies of the Safety Evaluation and the Federal Register Notice related to this action also are enclosed.

Sincerely,

Original signed by  
 Dennis L. Ziemann

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

Enclosures:  
 See next page

\*NOTE: See previous yellow  
 for concurrences

OFFICE →	OR:ORB #2	OR:ORB #2	OELD	OR:ORB #2	OR:AD/OR	
SURNAME →	RMDiggs	WEConverse:ro		DLZiemann	KRGoller	KRG
DATE →	1/176*	5/11/76*	1/176*	5/11/76*	5/12/76	

DISTRIBUTION

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

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 16 and 14 to Facility License Nos. DPR-19 and DPR-25 for the Dresden Nuclear Power Station Units 2 and 3, respectively. The amendments consist of changes in the Technical Specifications and are in response to your request dated December 3, 1974, *as supported by Filings dated February 18, 1975*

The amendments consist of changes in the Technical Specifications that add interim surveillance requirements to assure the integrity of certain high energy lines outside containment. The requirements are intended to remain in effect only until modifications which would acceptably mitigate the effects of postulated high energy line breaks outside containment have been completed. *and September 1975.*

~~Our Safety Evaluation also discusses our findings with respect to your report submitted February 18, 1975, regarding the consequences of high energy line breaks outside containment and your letter of September 16, 1975, regarding proposed design modifications to mitigate the consequences of postulated high energy line breaks outside containment.~~

Your proposed schedule for completion of the modifications as described in your letter of October 21, 1975, is acceptable.

Copies of the Safety Evaluation and the Federal Register Notice related to this action also are enclosed.

Sincerely,

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

*RK*  
 OR:ORB #2  
 RDSilver  
 3/2/76

Enclosures:  
 See next page

OFFICE	OR:ORB #2	OR:ORB #2	OELD <i>DL</i>	OR:ORB #2 <i>DL</i>	OR/AD
SURNAME	RMDiggs	WEConverse:ro	<i>DL ZIEMANN</i>	DLZiemann	KRGoller
DATE	3/10/76	3/9/76	3/2/76 +5/5/76	3/6/76	5/1/76



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

May 12, 1976

Docket Nos. 50-237, 50-249

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

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 16 and 14 to Facility License Nos. DPR-19 and DPR-25 for the Dresden Nuclear Power Station Units 2 and 3, respectively. The amendments consist of changes in the Technical Specifications and are in response to your request dated December 3, 1974, as supported by filings dated February 18, 1975 and September 16, 1975.

The amendments consist of changes in the Technical Specifications that add interim surveillance requirements to assure the integrity of certain high energy lines outside containment. The requirements are intended to remain in effect only until modifications which would acceptably mitigate the effects of postulated high energy line breaks outside containment have been completed.

Your proposed schedule for completion of the modifications as described in your letter of October 21, 1975, is acceptable.

Copies of the Safety Evaluation and the Federal Register Notice related to this action also are enclosed.

Sincerely,

A handwritten signature in cursive script that reads "Dennis L. Ziemann".

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

Enclosures:  
See next page

May 12, 1976

Enclosures:

1. Amendment No. 16 to DPR-19
2. Amendment No. 14 to DPR-25
3. Safety Evaluation
4. Federal Register Notice

cc w/enclosures:

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Morris Public Library  
604 Liberty Street  
Morris, Illinois 60451

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

cc w/enclosures & filings by CEC  
dtd. 1/23/74, 3/22/74, 12/3/74,  
2/18/75, 9/16/75 and 10/21/75:

Mr. Leroy Stratton  
Bureau of Radiological Health  
Illinois Department of Public Health  
Springfield, Illinois 62706



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 16  
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 December 3, 1974, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*Karl R. Goller*

Karl R. Goller, Assistant Director  
for Operating Reactors  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 12, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 16

FACILITY OPERATING LICENSE NO. DPR-19

DOCKET NO. 50-237

Replace page iii of the Table of Contents of the Technical Specifications with the attached revised page iii and add new pages 156a, 156b and 156c. The changed area on the revised page iii is shown by a marginal line.

TABLE OF CONTENTS (Cont)

	<u>LIMITING CONDITIONS OF OPERATION</u>	<u>SURVEILLANCE</u>
3.6	PRIMARY SYSTEM BOUNDARY . . . . .	87 . . . . . 4.6
	A. Thermal Limitations . . . . .	87 . . . . . A
	B. Pressurization Temperature . . . . .	88 . . . . . B
	C. Coolant Chemistry . . . . .	88 . . . . . C
	D. Coolant Leakage . . . . .	89 . . . . . D
	E. Safety and Relief Valves . . . . .	90 . . . . . E
	F. Structural Integrity . . . . .	91 . . . . . F
	G. Jet Pumps . . . . .	91 . . . . . G
	H. Recirculation Pump Flow Mismatch . . . . .	91a . . . . . H
3.7	CONTAINMENT SYSTEMS . . . . .	108 . . . . . 4.7
	A. Primary Containment . . . . .	108 . . . . . A
	B. Standby Gas Treatment System . . . . .	118 . . . . . B
	C. Secondary Containment . . . . .	119 . . . . . C
	D. Primary Containment Isolation Valves . . . . .	121 . . . . . D
3.8	RADIOACTIVE MATERIALS . . . . .	133 . . . . . 4.8
	A. Airborne Effluents . . . . .	133 . . . . . A
	B. Mechanical Vacuum Pump . . . . .	135 . . . . . B
	C. Liquid Effluents . . . . .	135 . . . . . C
	D. Radioactive Waste Storage . . . . .	136 . . . . . D
	E. General . . . . .	137 . . . . . E
3.9	AUXILIARY ELECTRICAL SYSTEMS . . . . .	146 . . . . . 4.9
3.10	REFUELING . . . . .	151 . . . . . 4.10
	A. Refueling Interlocks . . . . .	151 . . . . . A
	B. Core Monitoring . . . . .	151 . . . . . B
	C. Fuel Storage Pool Water Level . . . . .	152 . . . . . C
	D. Control Rod and Control Rod Drive Maintenance . . . . .	152 . . . . . D
	E. Extended Core Maintenance . . . . .	153 . . . . . E
3.11	HIGH ENERGY PIPING INTEGRITY (OUTSIDE CONTAINMENT) . . . . .	156a . . . . . 4.11

### 3.11 High Energy Piping Integrity (Outside Containment)

#### Applicability:

Applies to operating status of certain piping outside primary containment.

#### Objective:

To assure the integrity of sections of piping which is postulated to effect safe plant shutdown.

#### Specification:

1. The high energy piping sections identified in Table 4.11-1 shall be maintained free of visually observable through wall leaks.
  - A. If a leak is detected by the surveillance program of 4.11, efforts to identify the source of the leaks shall be started immediately.
  - B. If the source of leakage can not be identified within 24 hours of detection or if the leak is found to be from a break in the piping sections identified in Table 4.11-1, the pressure within the section of piping shall be brought to atmospheric pressure within 48 hours.
2. When the modifications identified in Commonwealth Edison's letter to the NRC dated September 16, 1975 (G. Abrell to D. Ziemann), have been completed, Technical Specifications 3.11 and 4.11 will no longer be required.

### 4.11 High Energy Piping Integrity

#### Applicability:

Applies to the periodic examination requirements for certain piping outside primary containment.

#### Objective:

To determine the condition of the sections of piping.

#### Specification:

The inspections listed in Table 4.11-1 shall be performed as specified.

TABLE 4.11-1

Surveillance Requirements for High Energy Piping Outside Containment

<u>Piping</u>	<u>Surveillance Area</u>	<u>Surveillance Technique</u>	<u>Frequency</u>
Main Steam	from primary containment penetration to secondary containment penetration	Visual(1)	30 days
Reactor Feedwater Piping	from primary containment penetration to secondary containment penetration	Visual(1)	30 days
	and "A"(2) Reactor Feed Pump discharge to the 24-inch Diameter Feedwater Header	Visual(1)	30 days
HPCI Steam Piping	from the primary containment penetration to the reactor building penetration	Visual(1)	30 days

(1) Visual observation of piping insulation and area for evidence of wetness or any physical damage resulting from a leak. Surveillance to be performed using normal access without scaffolding or any other access aids.

(2) "A" Reactor Feed Pump for Unit 2  
 "C" Reactor Feed Pump for Unit 3

Bases:

High Energy Piping Integrity (Outside  
Containment)

Intensive analysis and review has shown that there are specific postulated high energy piping system failures which have the potential to inhibit safe cold shutdown of the reactor. This conclusion is based on utilizing the basic NRC high energy line break criteria. To reduce the probability of such failures, certain plant modifications are necessary. Until these modifications are complete, additional surveillance will be performed during plant operation to enhance the detection of piping system defects. The inservice examination and the frequency of inspection will provide a means for timely detection of such piping defects.



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 14  
License No. DPR-25

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 3, 1974, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*Karl R. Goller*

Karl R. Goller, Assistant Director  
for Operating Reactors  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 12, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 14

FACILITY OPERATING LICENSE NO. DPR-25

DOCKET NO. 50-249

Replace page iii of the Table of Contents of the Technical Specifications with the attached revised page iii and add new pages 156a, 156b and 156c. The changed area on the revised page iii is shown by a marginal line.

TABLE OF CONTENTS (Cont)

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	D. Coolant Leakage . . . . .	89 . . . . D
	E. Safety and Relief Valves . . . . .	90 . . . . E
	F. Structural Integrity . . . . .	91 . . . . F
	G. Jet Pumps . . . . .	91 . . . . G
	H. Recirculation Pump Flow Mismatch . . . . .	91a . . . . H
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	E. General . . . . .	137 . . . . E
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3.10	REFUELING . . . . .	151 . . . . 4.10
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	B. Core Monitoring . . . . .	151 . . . . B
	C. Fuel Storage Pool Water Level . . . . .	152 . . . . C
	D. Control Rod and Control Rod Drive Maintenance . . . . .	152 . . . . D
	E. Extended Core Maintenance . . . . .	153 . . . . E
3.11	HIGH ENERGY PIPING INTEGRITY (OUTSIDE CONTAINMENT) . . . . .	156a . . . . 4.11

### 3.11 High Energy Piping Integrity (Outside Containment)

#### Applicability:

Applies to operating status of certain piping outside primary containment.

#### Objective:

To assure the integrity of sections of piping which is postulated to effect safe plant shutdown.

#### Specification:

1. The high energy piping sections identified in Table 4.11-1 shall be maintained free of visually observable through wall leaks.
  - A. If a leak is detected by the surveillance program of 4.11, efforts to identify the source of the leaks shall be started immediately.
  - B. If the source of leakage can not be identified within 24 hours of detection or if the leak is found to be from a break in the piping sections identified in Table 4.11-1, the pressure within the section of piping shall be brought to atmospheric pressure within 48 hours.
2. When the modifications identified in the Commonwealth Edison letter to the NRC dated September 16, 1975 (G. Abrell to D. Ziemann), have been completed, Technical Specifications 3.11 and 4.11 will no longer be required.

### 4.11 High Energy Piping Integrity

#### Applicability:

Applies to the periodic examination requirements for certain piping outside primary containment.

#### Objective:

To determine the condition of the sections of piping.

#### Specification:

The inspections listed in Table 4.11-1 shall be performed as specified.

TABLE 4.11-1

Surveillance Requirements for High Energy Piping Outside Containment

<u>Piping</u>	<u>Surveillance Area</u>	<u>Surveillance Technique</u>	<u>Frequency</u>
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	and "A"(2) Reactor Feed Pump discharge to the 24-inch Diameter Feedwater Header	Visual(1)	30 days
HPCI Steam Piping	from the primary containment penetration to the reactor building penetration	Visual(1)	30 days

(1) Visual observation of piping insulation and area for evidence of wetness or any physical damage resulting from a leak. Surveillance to be performed using normal access without scaffolding or any other access aids.

(2) "A" Reactor Feed Pump for Unit 2  
 "C" Reactor Feed Pump for Unit 3

**Bases:**

**High Energy Piping Integrity (Outside Containment)**

Intensive analysis and review has shown that there are specific postulated high energy piping system failures which have the potential to inhibit safe cold shutdown of the reactor. This conclusion is based on utilizing the basic NRC high energy line break criteria. To reduce the probability of such failures, certain plant modifications are necessary. Until these modifications are complete, additional surveillance will be performed during plant operation to enhance the detection of piping system defects. The inservice examination and the frequency of inspection will provide a means for timely detection of such piping defects.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NOS. 16 AND 14 TO LICENSE NOS. DPR-19 AND DPR-25

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

INTRODUCTION

By letter dated December 3, 1974,<sup>1/</sup> the Commonwealth Edison Company requested an amendment to Facility License Nos. DPR-19 and DPR-25 for the Dresden Nuclear Power Station Units 2 and 3. The request involves revisions to the Technical Specifications with regard to interim requirements to assure the integrity of high energy lines outside containment pending completion of certain modifications. By letter dated February 18, 1975,<sup>2/</sup> Commonwealth Edison submitted an evaluation of the consequences of postulated high energy line breaks outside containment. By letter of September 16, 1975,<sup>3/</sup> they submitted a letter regarding proposed modifications to mitigate the consequences of the postulated breaks. This report includes our evaluation of consequences, proposed modifications and technical specifications associated with the postulated line breaks.

DISCUSSION

On December 14, 1972, and January 16, 1973, the Atomic Energy Commission's Regulatory staff sent letters to Commonwealth Edison Company (CECo) requesting a detailed design evaluation to substantiate that the designs

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<sup>1/</sup> Letter, B. Lee, Jr to E. G. Case, Docket Nos. 50-237 and 50-249, December 3, 1974.

<sup>2/</sup> Dresden Station - Special Report No. 37, Revision 1, "Analysis of Effects of Pipe Break Outside the Primary Containment," for CECo by Sargent & Lundy, cover letter dated February 18, 1975.

<sup>3/</sup> Letter, G. A. Abrell to D. L. Ziemann, Docket No. 50-237 and 50-249, September 16, 1975.

of the Dresden Station, Units 2 and 3 are adequate to withstand the effects of postulated ruptures in any high energy fluid piping system outside the primary containments, including the double-ended rupture of the largest line in the main steam and feedwater systems. It was further requested that if the results of the evaluation indicated that changes in the designs were necessary to assure safe plant shutdown, information on these design changes and plant modifications would be required. Criteria for conducting this evaluation were included in the letters.

In response to our letters, Dresden Station, Units 2 and 3 - Special Report No. 37,<sup>4/</sup> "Analysis of Effects of Pipe Break Outside the Primary Containment,"<sup>4/</sup> was filed by CECo on January 23, 1974. Supplement 1<sup>5/</sup> to that report was filed by letter dated March 22, 1974. By letter dated February 18, 1975, CECo filed Dresden Station, Units 2 and 3 - Special Report No. 37, Revision 1<sup>2/</sup> of the same title as the original report. The revision replaced the previous report in its entirety. A surveillance program for certain high energy lines outside of containment was proposed by the licensee by letter dated December 3, 1974.<sup>1/</sup> This surveillance involved inspection of high energy piping identified in reference 2 as areas of concern in the event of a pipe break. Specific modification plans for these areas of concern for Dresden Station, Units 2 and 3, were filed by letter dated September 16, 1975.<sup>3/</sup>

## EVALUATION

### A. Evaluation of Existing Design

#### 1. Criteria

A summary of the criteria and requirements included in our letter of December 14, 1972, is set forth below:

- a. Protection of equipment and structures necessary to shut down the reactor and maintain it in a safe shutdown condition,

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<sup>4/</sup> Dresden Station - Special Report No. 37, "Analysis of Effects of Pipe Break Outside the Primary Containment," for CECo by Sargent & Lundy, cover letter dated January 23, 1974.

<sup>5/</sup> Dresden Station - Special Report No. 37, Supplement No. 1, "Analysis of Effects of Pipe Break Outside the Primary Containment," for CECo by Sargent & Lundy, cover letter dated March 22, 1974.

assuming a concurrent and unrelated single active failure of protected equipment, should be provided from all effects resulting from ruptures in pipes carrying high energy fluid, where the temperature and pressure conditions of the fluid exceed 200<sup>o</sup>F and 275 psig, respectively, up to and including a double-ended rupture of such pipes. Breaks should be assumed to occur in those locations specified in the "pipe whip criteria." The rupture effects to be considered include pipe whip, structural (including the effects of jet impingement), and environmental.

- b. In addition, protection of equipment and structures necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming a concurrent and unrelated single active failure of protected equipment, should be provided from the environmental and structural effects (including the effects of jet impingement) resulting from a single open crack at the most adverse location in pipes carrying fluid routed in the vicinity of this equipment. The size of the cracks should be assumed to be 1/2 the pipe diameter in length and 1/2 the wall thickness in width (defined as "critical crack size").

## 2. High Energy Systems

Our evaluation included the following piping systems containing high energy fluids:

Main Steam System (MS)  
Extraction and Auxiliary Steam Systems  
Feedwater System (FW)  
Condensate System  
Isolation Condenser System (IC)  
High Pressure Coolant Injection System (HPCI)  
Reactor Water Cleanup System (RW)

## 3. Areas or Systems Affected by High Energy Pipe Breaks

An evaluation was conducted by the licensee of the effects of high energy pipe breaks on the following systems, components, and structures which would be necessary (in various combinations, depending on the effects of the break) to safely shutdown, cool-down, and maintain cold shutdown conditions.

- a. General
  - (1). Control and Instrument Cables and Tunnels
  - (2). Electrical Distribution System
  - (3). Emergency dc Power Supply (batteries)
  - (4). Emergency ac Power Supply (**diesels**)
  - (5). Heating and Ventilation Systems (needed for long-term occupancy to maintain the reactor in safe shutdown condition)
- b. Reactor Control Systems and associated instrumentation
- c. Cooling and Service Water Systems
- d. ECCS components
- e. Structures
  - (1). Containment
  - (2). Main Steam Tunnel
  - (3). Control Room
  - (4). Vital electric load centers and switchgear rooms
  - (5). Diesel generator room
  - (6). Ventilation equipment rooms.

The NRC staff (the "staff") has concluded that the above listed components, systems, and structures are those which would be necessary to safely shutdown and cooldown the reactor and maintain the plant in a cold shutdown condition.

#### 4. Specific Areas of Concern

The licensee has provided the results of his examination of all postulated safety related high energy line break locations and evaluated the break consequences. We have reviewed all of this information, including the following specific areas of concern where the potential consequences might be severe or where specific corrective action would further assure safe cold shutdown of the plant. Unless otherwise stated, the below discussion applies to both Units 2 and 3.

a. Compartment Pressurization

Large pipes, including the double-ended rupture of the largest pipes in a system, and pipe cracks up to the critical size (defined in Section A.1.b above) have been considered for pipes in the main steam tunnel, the reactor building (outside containment), and the turbine building. The licensee's compartment pressurization calculations include pressure plus impingement forces.

Each of the facility's steam tunnels is divided into two compartments by a slab fitted with blowout panels which function to equalize pressure when a 2 psi differential pressure exists between the compartments. For each steam tunnel, the licensee has assumed a simultaneous rupture of one MS line and two adjacent FW lines. MS isolation valve closure was assumed to occur 5.5 seconds after the rupture. For this case, the maximum steam tunnel pressure calculated was 20.9 psia. The tunnel walls could easily withstand this transient. However, the forces generated in such a transient could damage the blowout panels which could cause subsequent damage to cable trays located in the upper tunnel compartment. These cable trays carry safety related cabling. The main steamline circumferential and longitudinal break points identified in Table 12 of Ref. 2 could produce such damage. To prevent damage to this safety related equipment, the licensee would provide improved support for the blowout panels by:

- (1). Installing an additional W36 x 135 beam on top of the existing W24 on the east-west wall of the tunnel, 11 feet south of column row "G";
- (2). Replacing the existing 6B x 12 north-south beams supporting the panels with five W21 x 55 beams; and
- (3). Upgrading the chains restraining the blowout panels.

In the reactor building, the consequences of high energy line breaks and cracks in the HPCI, RW, and IC systems were evaluated. Damage to the torus, a steel-walled steam suppression chamber used as a heat sink in several modes of operation of the emergency core cooling system (ECCS), could occur as a result of certain HPCI pipe longitudinal breaks identified in Table 13, Ref. 2. To prevent damage to the torus, the licensee would provide pipe restraints at the critical break points to reduce the impingement loads. These restraints would consist of U-shaped plates covering the break points and anchored to the nearest structure.

Pressure calculations for the turbine building produced no areas of concern with respect to safety related equipment.

The staff has concluded that the modifications identified above would prevent damage to safety related equipment which could be caused by compartment pressurization.

b. Pipe Whip

The effects of pipe whip on structure walls and safety related components have been calculated by the licensee for MS and FW system pipe breaks in the steam tunnel, and for MS and FW system pipe breaks in the turbine building, and for HPCI, RW, and IC system pipe breaks in the reactor building. Break points were chosen in accordance with the guidelines set forth in our December 14, 1972 and January 16, 1973 letters. Pipe whip calculations include pressure and impingement forces.

In the steam tunnel, whipping MS pipes could cause damage to the blowout panels similar to that caused by pressure and impingement forces alone (see Section a.). Damage to safety cabling could occur as a result of circumferential breaks in the MS system pipes indicated in Table 16, Ref. 2. The modifications proposed by the licensee to handle the pressure transient will also serve to mitigate the consequences of the pipe whip.

In Unit 2 turbine building only, a whipping FW pipe, resulting from circumferential breaks indicated in Table 13 of Ref. 2, could damage the wall adjacent to the emergency diesel generator. Subsequent damage to the diesel could occur. To prevent damage to the diesel, the licensee would erect a frame constructed of cross-braced columns anchored to the floor to protect against pipe whip damage.

In the reactor building, whipping HPCI pipes, resulting from circumferential pipe breaks indicated in Table 17 of Ref. 2 could damage the torus (described in a. above) or the low pressure coolant injection (LPCI) valve operator (MO-2-1501-20A), both serving safety related functions. The U-shaped restraints (described in Section a.) installed at the critical break points would also serve to mitigate the consequences of a pipe whip.

The staff has concluded that the modifications identified above would prevent damage to safety related equipment which could be caused by pipe whip.

c. Compartment Flooding

The licensee has determined the effects of flooding for steam or feedwater line breaks in the steam tunnel, the reactor building, and the turbine building. Although the main steam isolation valves could be short circuited should the steam tunnel fill with water, these valves would fail in the shut position and safe shutdown would not be impaired. No other safety related equipment or wiring would be endangered by potential flooding caused by MS, FW, HPCI, RW, or IC system pipe breaks.

We have reviewed the licensee's analysis of compartment flooding, and conclude that no loss of function of safety related equipment or wiring would result from such flooding.

d. Environmental Effects

Components and equipment were checked for possible adverse environmental effects which could be caused by the rupture of a high energy line. Adverse temperature, pressure, and humidity were the parameters which were used in the evaluation of safety related equipment.

We have reviewed the licensee assessment of the consequences of environmental effects on safety related equipment. We find that safety related equipment has been designed to limits in excess of postulated conditions which could arise from the rupture of a high energy line.

e. Control Room Habitability

The licensee has stated that the main control room is physically located away from and isolated from all high energy lines and that neither the control room equipment nor its ventilation system would be affected by environmental effects caused by a rupture of a high energy line.

We have reviewed the licensee's assessment of control room habitability, and conclude that the control room would be habitable in the event of a high energy line break outside containment.

B. Modifications

Modifications to the existing facility will be required to assure that Dresden Station, Units 2 and 3 can be safely shut down in the event of a high energy line break outside of containment. The modifications listed below have been described by the licensee in their September 16, 1975 letter. We have concluded that these modifications would be required to assure that the reactor could be shut down and maintained in a safe shutdown condition.

1. Provide an improved support system for the tunnel blowout panels by adding an additional W36 x 135 beam to the existing W24 on the east-west wall of the steam tunnel; replace the existing 6B x 12 north-south beams supporting the panels with five W21 x 55 beams; and upgrade the blowout panel restraint chains and supports.
2. Provide U-shaped restraints at the critical break points, HPCIL<sub>1</sub> through HPCIL<sub>3</sub> and HPCIC<sub>1</sub> through HPCIC<sub>3</sub> (licensee's designation used in Ref. 2).
3. For Unit 2 only, install a pipe whip restraint consisting of two cross-braced columns anchored to the floor foundation to protect the diesel generator room walls from pipe whip damage.

C. Interim Surveillance Requirements

Commonwealth Edison has proposed to visually inspect the main steam feedwater and HPCI steam piping outside containment monthly until the modifications described above are completed. We have reviewed the proposed interim surveillance program and have determined that it would provide added assurance that abnormal degradation of these pipes would be detected promptly.

We have concluded that the proposed interim surveillance requirements provide reasonable assurance that high energy line failures would be detected before the occurrence of damage to safety related piping and equipment and are acceptable.

D. Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that these amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of the amendments.

CONCLUSIONS

On the basis of this review of the information submitted to us and on our discussion with representatives of the CECo, we have concluded that the licensee's assessment of the consequences of high energy line failures outside containment is acceptable. Some modifications to the facility are necessary. We have concluded that the potential consequences of postulated high energy pipe failures, following the modifications, will not prevent the capability of Dresden Station, Units 2 and 3 to achieve safe cold shutdown conditions consistent with the single failure and redundancy requirements described in our letter of December 14, 1972.

The licensee has stated by letter<sup>6/</sup> dated October 21, 1975 that the above modifications for Dresden Unit 2 will be complete by the end of the Spring 1976 refueling outage, and by the end of the Fall 1976 refueling outage for Dresden Unit 3. Because of the high energy line surveillance which the licensee will perform and the limited time required for completion of the modifications, the likelihood of a high energy line break occurring before the modifications are complete is reduced. Based on these considerations, we have concluded that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

DATE: May 12, 1976

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<sup>6/</sup> Letter, G. A. Abrell to Director of Nuclear Regulation, Docket No. 50-10, October 21, 1975.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-237 AND 50-249

COMMONWEALTH EDISON COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO  
FACILITY OPERATING LICENSES

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 16 and 14 to Facility Operating License Nos. DPR-19 and DPR-25, respectively, issued to the Commonwealth Edison Company (the licensee), which revised Technical Specifications for operation of the Dresden Nuclear Power Station Units 2 and 3 (the facilities) located in Grundy County, Illinois. The amendments are effective as of their date of issuance.

The amendments incorporate increased surveillance requirements in the Technical Specifications to provide additional assurance that high energy line failures outside of containment will not occur during the short period of time the facilities will be operated prior to completing certain modifications to assure that the facilities can withstand the consequences of postulated ruptures in high energy piping outside of containment.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license

amendments. Notice of the Proposed Issuance of Amendments to Facility Operating Licenses in connection with this action was published in the FEDERAL REGISTER on October 30, 1974 (39 FR 38275). No request for a hearing or petition for leave to intervene was filed following notice of the proposed action.

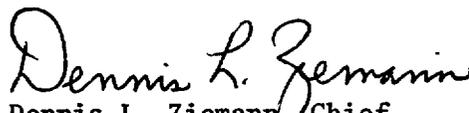
The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of the amendments.

For further details with respect to this action, see (1) the application for amendments dated December 3, 1974 and related items dated January 23, 1974, March 22, 1974, February 18, 1975, September 16, 1975 and October 21, 1975, (2) Amendment No. 16 to License No. DPR-19, (3) Amendment No. 14 to License No. DPR-25, and (4) the Commission's concurrently issued related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Morris Public Library, 604 Liberty Street, Morris, Illinois 60451.

A single copy of items (2), (3) and (4) above may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 12th day of May, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

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