

FIRE ZONE B.2.4
 ELEVATION 502'-6"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▭ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓜ PRIMARY ACCESS
- Ⓜ SECONDARY ACCESS

NOTES

L U2TB-44 & 2/S7B-92
 AT LEVEL ABOVE

COMMONWEALTH EDISON CO.
 DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Unit 2/3 Turbine Building
 Elevation 502'-6"
 Fire Zone 8.2.4
 Cable Tunnel, East End

2.0 Access:

- 2.1 Primary: From manhole in Aux. Elec. Room, el. 517' down to el. 502'
- 2.2 Secondary: From manhole South of EHC pumps, el. 517' down to el. 502'

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Electrical Cables	Cable Insulation	A-C

3.2 Electrical: None

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: Entrapment possible due to locked hatches.
 Confined Space

4.0 Fire Protection Equipment:

- 4.1 Detection: Ionization Detectors
- 4.2 Automatic Suppression: Wet Pipe System
- 4.3 Hose Reels: None in tunnel, 1 at 517' el.
- 4.4 Portable Extinguishers: 3 - CO₂

5.0 Guidelines for Fire Attack:

- Establish command post near manhole cover in Aux. Elect. Room el. 517'.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- Self-contained breathing apparatus should be used by all personnel.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve at el. 517', behind fire panels South of EHC Pump.
- Provide a fire watch until fire detection system is returned to service, if out of service time greater than 1 hour per DATRs.
- **SPECIAL NOTE:** Extra lengths (minimum 50') of hose need to be added to hose stations prior to charging hoses to reach this area.

6.0 Ventilation:

- 6.1 Fixed: As necessary, have Control Room shut down HVAC to prevent spreading smoke or change HVAC to smoke exhaust mode.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up thru manhole in Aux. Elect. Room or up access holes near EHC pumps.
- 6.3 Fire Dampers: Fire Dampers may not close against air flow, therefore, shut down the ventilation system to ensure closure.

7.0 Exposures: Safety-Related Equipment

Unit 3 Divisions I and II Cable Trays

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 2 Extension Phones

9.0 Construction:

- 9.1 Floor: 18" Reinforced concrete - 3 hour

9.2 Wall:

- a. North: 18" Reinforced concrete
- b. South: 18" Reinforced concrete
- c. East: 18" Reinforced concrete, 3-hour rated
- d. West: Open (continues into 3CT-101)

9.3 Ceiling: 8" Reinforced concrete, 3-hour rated except for exposed steel manholes

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

SPECIAL NOTE:

Extra lengths (minimum 50') of hose need to be added to hose stations prior to charging hoses to reach this area.

2.0 ACCESS

Primary: From manhole at U-3
Trackway el. 517'-6" down
to el. 502'

Secondary: From manhole South of
EHC pumps, el. 517' to
el. 502'

4.0 FIRE PROTECTION EQUIPMENT

Detection: Ionization
Suppression: Wet Pipe System

1 - CO₂ Portable Extinguisher

6.0 VENTILATION

Fixed: Operation of HVAC by Control
as needed.

Manual: Use portable smoke ejectors
and flexible ducting to
exhaust smoke up through
manhole(s) near EHC pumps
or in Unit 3 trackway.

8.0 COMMUNICATIONS

1 Extension Phone
Portable Radios

1.0 LOCATION

Unit 3 Turbine Building
Elevation 502'-6"
Fire Zone 8.2.4
Cable Tunnel, West end

3.0 HAZARDS

Fire: Cable Insulation

Electrical: None

Other: Entrapment possible
Confined Space Entry

5.0 GUIDELINES FOR FIRE ATTACK

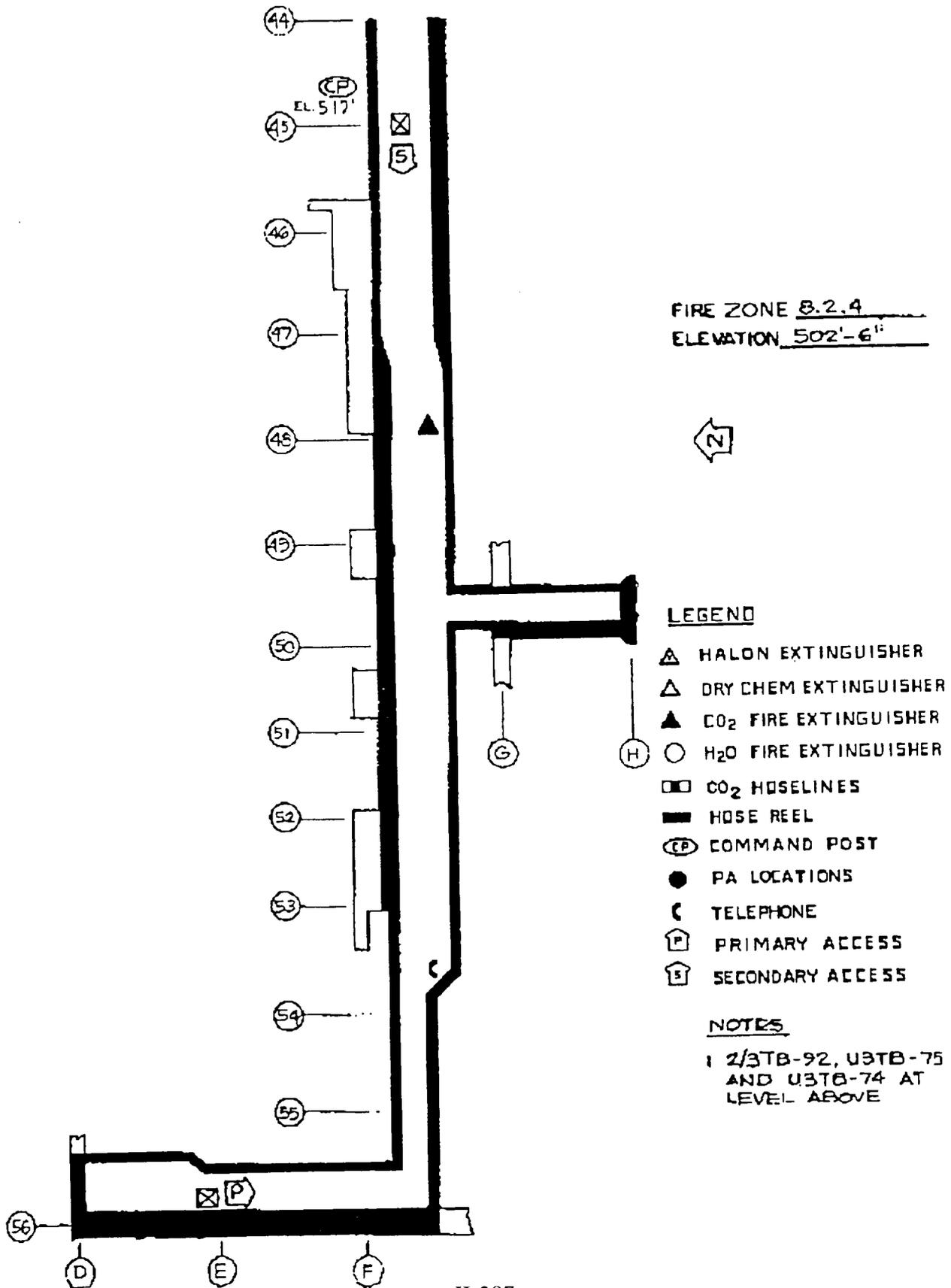
- Command Post near manhole
adjacent to HP heaters el. 517'-6"
- Check Sprinkler Actuation
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose line
- Search Area for Victims
- Ventilate
- Overhaul
- Provide a Fire Watch for Fixed
Systems

7.0 EXPOSURES

Division I and II Cable Trays

9.0 CONSTRUCTION

Walls/Floor - Concrete
Ceiling - Concrete with steel manhole
covers



COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Units 2/3 Turbine Bldg.
Elevation 502'-6"
Fire Zone 8.2.4
Cable Tunnel, West end

2.0 Access:

- 2.1 Primary: From manhole at U-3 trackway, el. 517'-6" down to el. 502'-6".
- 2.2 Secondary: From manhole South of EHC pumps, el. 517'-6" down to el. 502'-6".

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Electrical Cables	Cable Insulation	A, C

3.2 Electrical: None

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: Entrapment possible due to locked hatches.
Confined space entry.

4.0 Fire Protection Equipment:

- 4.1 Detection: Ionization Detectors
- 4.2 Automatic Suppression: Wet Pipe System
- 4.3 Hose Reels: None in Tunnel el. 502'-6"
- 4.4 Portable Extinguishers: 1 - CO₂

5.0 Guidelines for Fire Attack:

- Establish command post near manhole adjacent to HP heaters el. 517'-6".
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- Self-contained breathing apparatus should be used by all personnel.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve at el. 517'; behind fire panels South of EHC Pumps.
- Provide an hourly fire inspection until fire detection and suppression systems are returned to service, if out of service time greater than 1 hour per Tech Spec 3.12.A.2.a and 3.12.C.2.b.
- **SPECIAL NOTE:** Extra lengths (minimum 50') of hose need to be added to hose stations prior to charging hoses to reach this area.

6.0 Ventilation:

- 6.1 Fixed: As necessary, have Control Room shut down HVAC to prevent spreading smoke or change HVAC to smoke exhaust mode.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up through manholes near the EHC pumps and in Unit 3 Trackway.

7.0 Exposures Safety-Related Equipment

Division I & II Cable Trays

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

- 9.1 Floor: 18-inch Reinforced concrete - 3 hour
- 9.2 Wall:
- a. North: 1'-6" Reinforced concrete
 - b. South: 1'-6" Reinforced concrete
 - c. East: Open/concrete
 - d. West: 1'-6" Reinforced concrete
- 9.3 Ceiling: 8-inch Reinforced concrete with steel manhole covers

1.0 LOCATION

2/3 Emergency (swing) Diesel Gen.
Elevation 517'
Fire Zone 9.0.C
2/3 Swing Diesel Generator Room

2.0 ACCESS

Primary: The door of personnel access
airlock from Unit 2 Reactor
Building el. 517', DS key
needed to access area

Secondary: None

3.0 HAZARDS

Fire: Cable Insulation
Fuel & Lubricating Oils
HVAC Flex Connection
Polyethylene

Electrical: See 3.2

Other: CO₂ hazard in adjacent areas including
HPCI and LPCI areas
Transformer containing PCB

4.0 FIRE PROTECTION EQUIPMENT

Detection: Thermal
Suppression: CO₂ System,
Wet Pipe Sprinklers
1 - Hose Reel outside room
1 - CO₂ Portable Extinguisher
1 - Dry Chemical Portable
Extinguisher outside room

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at Rx Bldg. Unit 2, SW corner
- Provide support for Sprinkler System
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- De-energize Electrical Equip.
- Ventilate and Overhaul
- Provide a person for surveillance for Sprinkler
Valve and Fire Watch
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: None

Manual: Utilize portable smoke ejectors
and flexible ducting to exhaust
smoke through doors of airlock to
Rx Bldg. Unit 2 up stairs in SW
corner of U-2 Rx. Bldg. el. 517'

7.0 EXPOSURES

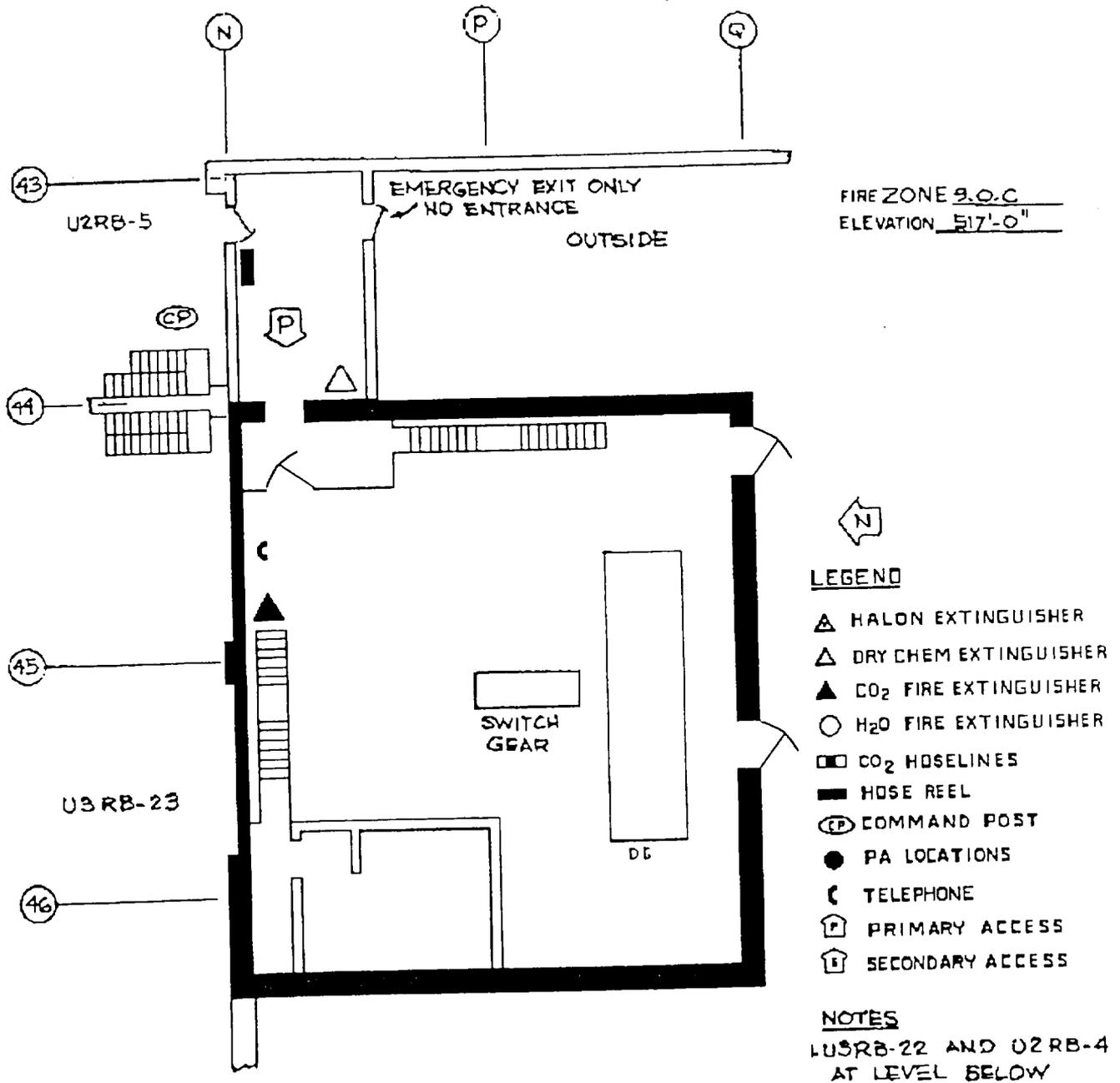
2500 KW Standby Diesel Generator
Diesel Generator Vent Fan
Air Receiver
Diesel Fuel Oil Transfer Pump
750 gal. Diesel Fuel Oil Day Tank

8.0 COMMUNICATIONS

Portable Radios
1 Extension Phone

9.0 CONSTRUCTION

Ceiling - Concrete
Floor - Concrete on exposed structural steel
North Wall - Concrete, 3-hour rated
South/West/East Walls - Concrete



COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: 2/3 Emergency Diesel Generator
Elevation 517'
Fire Zone 9.0.C
2/3 Swing Diesel Generator Room

2.0 Access:

2.1 Primary: The door at Personnel Access Airlock from Unit 2 Rx Bldg. el. 517', DS key needed to access area

2.2 Secondary: None

3.0 Hazards:3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Diesel generator	Lubricating oil	B
Diesel day tank	Fuel oil	B
Panels	Cable insulation	A,C
-	Polyethylene	A

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3 5203	Diesel Oil Transfer Pump	F-1	480V MCC 28-1
	Diesel Air Compressor	A-1	480V MCC 28-1
2/3-5700	2500 KV Diesel Generator	G3	MCC 28-1
2/3-5203	D.G. Room Vent Fan	F1	MCC 28-1
	Diesel Fuel Oil Transfer Pump		
2/3A	Diesel Starting Air Compressor	A1	MCC 28-1
2/3B	Diesel Starting Air Compressor	C2	MCC 38-4

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3	Diesel Circ. Water Heater	E2	MCC 29-4
	Diesel Fuel Oil Transfer Pump	C2	MCC 38-1
2/3-5790	Diesel 2/3 Vent Fan	C4	MCC 38-1
3.3	<u>Hazardous Substances:</u>	None	
3.4	<u>Physical Hazards:</u>	CO ₂ hazard in adjacent areas including HPCI and LPCI rooms. Diesel Neutral Transformer containing PCB.	
3.5	<u>Life Safety:</u>	Diesel Neutral Transformer contains PBC.	

4.0 Fire Protection Equipment:

- 4.1 Detection: Thermal Detection
- 4.2 Automatic Suppression: CO₂ System
Wet Pipe Sprinkler System
- 4.3 Hose Reels: 1 - Hose Reel located in adjacent area
- 4.4 Portable Extinguishers: 1 - CO₂
1 - Dry Chemical located in adjacent area

5.0 Guidelines for Fire Attack:

- Establish command post at Unit 2 Rx Bldg. SW corner el. 517'.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- If suppression system fails to actuate, manual actuation.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Caution should be used in applying water to avoid electrical shock.
- De-energize electrical equipment if possible (see Section 3.2 for Electrical Component Listings).
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve located along North side of U-3 Reactor Building south wall near Col. N-45 at 517' el.

- Provide a fire watch until fire suppression and detection systems are returned to service, if out of service time greater than 1 hour per DATRs.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

6.1 Fixed: None

6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke through door at Personnel Access Airlock to Unit 2 Reactor Building up stairs in SW corner of U-2 Rx. Bldg el. 517'.

7.0 Exposures: 2500 KW Standby Diesel Generator
Diesel Generator Vent Fan
Air Receiver
Diesel Fuel Oil Transfer Pump
750 gallon Diesel Fuel Oil Day Tank

8.0 Communications:

8.1 Portable radios: OK to use

8.2 Public Address: No handset available

8.3 Telephone: 1 Extension Phone

9.0 Construction:

9.1 Floor: 42" Reinforced concrete on exposed steel with concrete access plugs

9.2 Wall:

- a. North: 18" Reinforced concrete, 3-hour rated
- b. South: 36" Reinforced concrete exterior wall
- c. East: 36" Reinforced concrete exterior wall
- d. West: 36" Reinforced concrete exterior wall

9.3 Ceiling: 12" Reinforced concrete with removable concrete plugs

2.0 ACCESS

Primary: From stairs North of
Radwaste Control Room el.
517' down to el. 488'. Rad
key and High Rad key
needed to access area

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

- 1 - Dry Chemical Portable Extinguisher
- 2 - Hose Reels (1 is at el. 503')

6.0 VENTILATION

Fixed: Control Room to control
Exhaust Fans. Damper
Controls at Local Panel in RW
Bldg. Fan Room (529 el.)

Manual: Utilize portable smoke ejector
and flexible ducting to
exhaust smoke up stairs to
el. 507'

8.0 COMMUNICATIONS

Portable Radios

1.0 LOCATION

Radwaste Building
Elevation 488'-0"
Fire Zone 14.1
Sludge/Spent Resin Tank

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil
Filters
Cotton
Wood
Paper

Electrical: See 3.2

Other: Radioactive Equipment

5.0 GUIDELINES FOR FIRE ATTACK

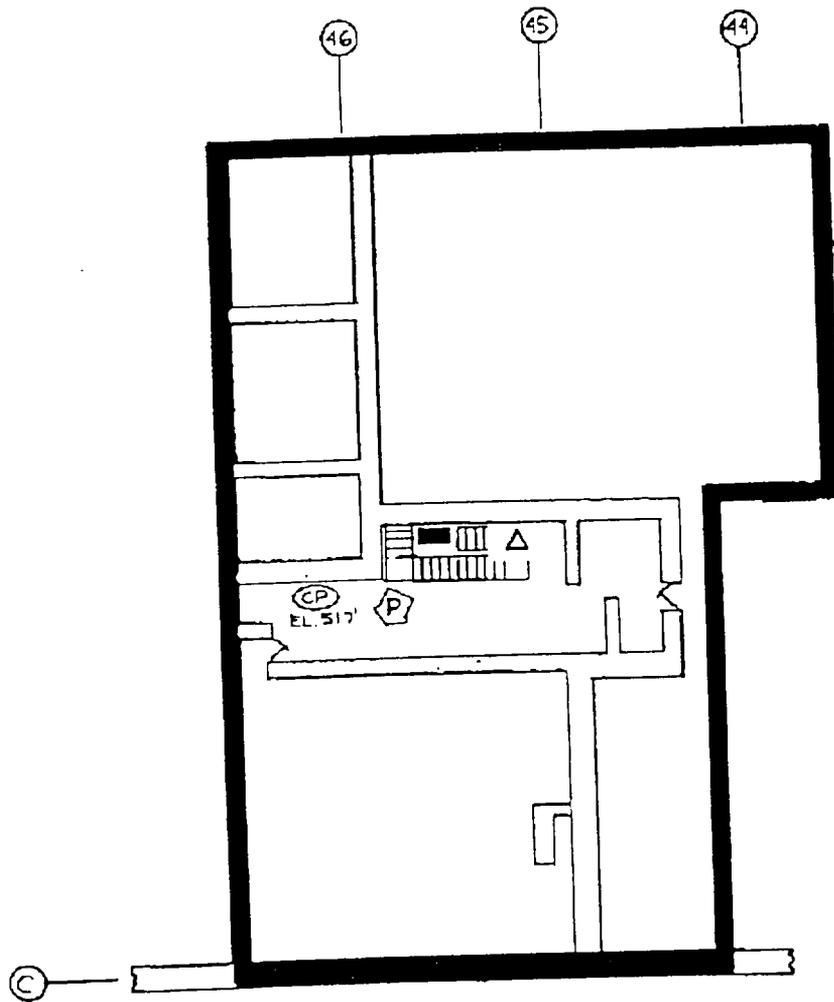
- Command Post near Radwaste
Control Room el. 517'
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose lines
- Search Area for victims
- Caution: de-energize equipment
- Ventilate
- Overhaul
- CAUTION: Combustible gap material

7.0 EXPOSURES

None

9.0 CONSTRUCTION

Concrete all sides



FIRE ZONE 14.1
 ELEVATION 488'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓕ PRIMARY ACCESS
- Ⓖ SECONDARY ACCESS

NOTES

1. 2/3 RW-109 AT LEVEL ABOVE
2. ANOTHER HOSE REEL IS AT 509' EL

COMMONWEALTH EDISON CO.
 DRESDEN NUCLEAR UNITS 2 & 3
FIRE PRE-PLAN

1.0 Location: Radwaste Building
 Elevation 488'-0"
 Fire Zone 14.1
 Sludge/Spent Resin Tank

2.0 Access:

- 2.1 Primary: From stairs North of Control Room, el. 517' down to el. 488'. Rad key and High Rad key needed to access area
- 2.2 Secondary: None

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
Ventilation System	Filters	A
Electrical Cables	Cable insulation	A
Clothing	Cotton	A
Barrel Discs	Paper	A
Lumber	Wood	A

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3-2001-260	Submersible Sewage Pump 2	F2	MCC 28-2
	CS Pump 2A Discharge Valve	C1	MCC 20-2
	CW Pump 2B Discharge Valve	C2	MCC 20-2
	Pwr. Feed TN-9 Aux. System	B6	MCC 29-3

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2001-468A	Waste Sample Tank Heater 11	A3	MCC 25-3
2001-468A	Waste Sample Tank Heater 12	A4	MCC 25-3
2001-463	Waste Surge Tank Heater 11	A5	MCC 25-3
2001-468B	Waste Sample Tank Heater 11	A3	MCC 25-4
2001-468B	Heater 12	A4	MCC 25-4
2001-463	Waste Surge Tank Heater 11	A5	MCC 25-4
2001-484A	Floor Drain Sample Tank Heater 11	A3	MCC 26-5
2001-484B	Floor Drain Sample Tank Heater 12	A4	MCC 26-5
2001-468C	Waste Sample Tank Heater 11	A3	MCC 26-6
2001-468C	Waste Sample Tank Heater 12	A4	MCC 26-6
2001-463	Waste Surge Tank Heater 13	A5	MCC 26-6
2/3-2001-249B	Waste Concentrator Vent Valve	B5	25-3B
2001-91	Spent Resin Decant Pump	B3	26-5B
2/3D-2001-249A	Waste Concentrator Vent Valve	B5	26-5B

- 3.3 Hazardous Substances: Radioactive Equipment (Tanks)
- 3.4 Physical Hazards: None
- 3.5 Life Safety: None

4.0 Fire Protection Equipment:

- 4.1 Detection: None
- 4.2 Automatic Suppression: None
- 4.3 Hose Reels: 2 - Hose Reels, 1 is at el. 503'.
- 4.4 Portable Extinguishers: 1 – Dry Chemical

5.0 Guidelines for Fire Attack:

- Establish command post near Radwaste Control Room el. 517'-6".
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fans. Damper Controls at Local Panel in RW Bldg. Fan Room (529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs to same level of the Radwaste Control Room el. 517'.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: None

9.0 Construction:

- 9.1 Floor: Reinforced concrete on grade
- 9.2 Wall:
- a. North: Reinforced concrete
 - b. South: Reinforced concrete
 - c. East: Reinforced concrete
 - d. West: Reinforced concrete
- 9.3 Ceiling: Reinforced concrete

2.0 ACCESS

Primary: Stairs North of Radwaste Control Room, el. 517' down to el. 507'. Contact R.P. for High Rad key

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

2 - Hose Reels
1 - Dry Chemical Portable Extinguisher

6.0 VENTILATION

Fixed: Control Room to Control Exhaust Fans. Damper Controls at Local Panel in RW Bldg. Fan Room (529'-0" el.)

Manual: Utilize portable smoke ejectors and flexible ducting up stairs to el. 517' near the Control Room Area

8.0 COMMUNICATIONS

Portable Radios

1.0 LOCATION

Radwaste Building
Elevation 507'-0"
Fire Zone 14.1
Barrel Storage

3.0 HAZARDS

Fire: Lubricating Oil
Filters
Cable Insulation
Cotton, Paper, Wood

Electrical: See 3.2

Other: None

5.0 GUIDELINES FOR FIRE ATTACK

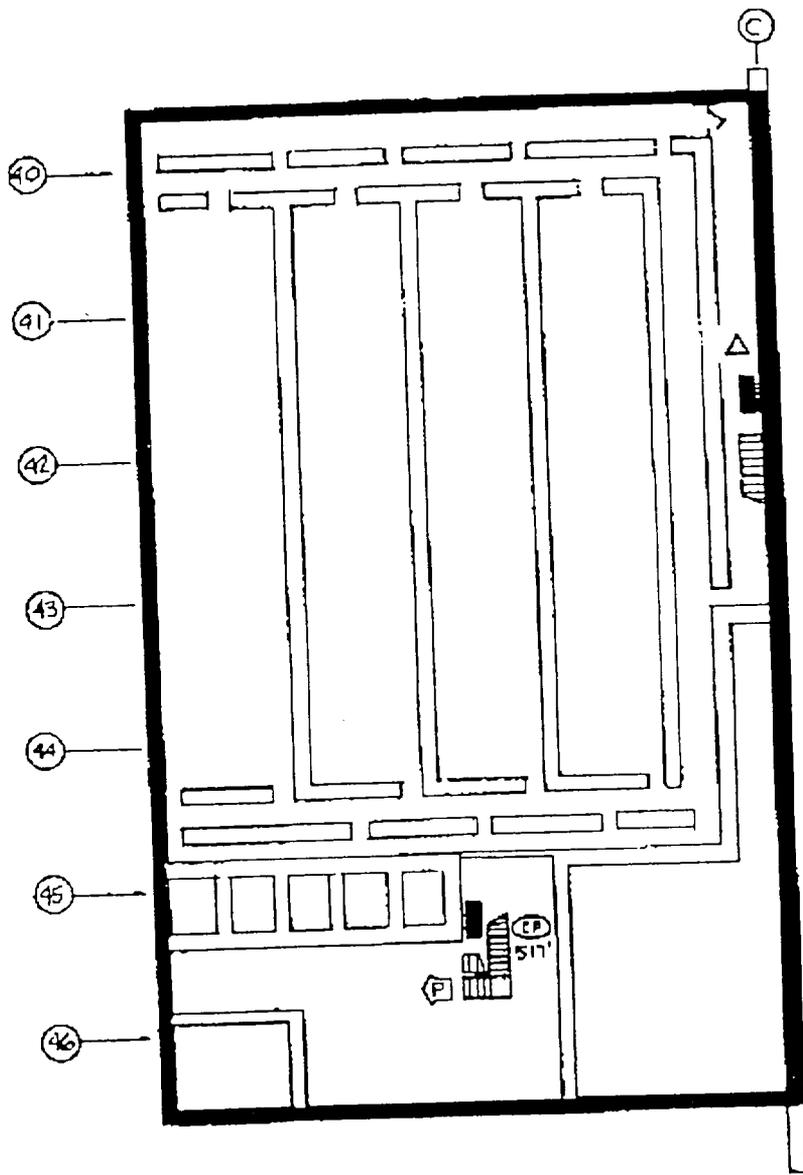
- Command Post near Radwaste Control Room el. 517'
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Caution: de-energize equipment
- Ventilate - Overhaul
- CAUTION: Combustible gap material

7.0 EXPOSURES

None

9.0 CONSTRUCTION

Floor and ceiling consist of concrete construction on exposed steel. The surrounding walls are of concrete construction



FIRE ZONE 14.1
 ELEVATION 507'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓜ PRIMARY ACCESS
- Ⓜ SECONDARY ACCESS

NOTES

1. 2/3 RW-108 AT LEVEL BELOW
2. 2/3 RW-110 AT LEVEL ABOVE

Note: Command Post near Radwaste Control Room el. 517'

COMMONWEALTH EDISON CO.
 DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 **Location:** Radwaste Building
 Elevation 507'-0"
 Fire Zone 14.1
 Barrel Storage

2.0 **Access:**

2.1 **Primary:** Stairs North of Radwaste Control Room, el. 517' down to el. 507'. Contact R.P. for High Rad key

2.2 **Secondary:** None

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
Ventilation System	Filters	A
Panels, Electrical Cables	Cable insulation	A,C
Clothing	Cotton	A
Barrel discs	Paper	A
Lumber	Wood	A

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
	Truck Bay Floor		
	Drain Collector Pump		
2/3-A-2001-47B	Waste Neutralizer		
2/3-B-2001-47B	Waste Neutralizer		
2/3-B-2001-454	Radwaste Building Floor	C4	MCC 27-5
	Drain Sump and Pump		
2001-483	Radwaste Process Cond.	B5	MCC 27-5
	Return Pump		
2/3-2035A	Filter Sludge Pumps	A2	MCC 27-2
2001-486	Reboiler Cond. Pump		

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3-2013	Floor Drain Coll. Pump	C5	MCC 27-4
2/3-A-2027	Spent Resin Pump	B3	MCC 27-5
2/3-A-2001-454	Radwaste Bldg. Floor Drain Sump and Pump		
2001-911	Spent Resin Decant Pump		
	Radwaste Drum Conveyor System	274D	480V Swgr 27
2/3 B-2035	Filter Sludge Pump	B1	MCC 27-2
2/3-2011	Waste Surge Pump	A5	MCC 27-4
2025	Concentrated Waste Pump	C6	MCC 27-5
2/3-A-2016	Floor Drain Sample Pumps	A3	MCC 27-5
2/3-B-2016	Floor Drain Sample Pumps	A4	MCC 27-5
	Pre-Coat Motor	B2	25-3B
2/3-5778	Radwaste Cond. Return Pump		
2/3-2001-458	Radwaste High Conduct. Sump Pump	C3	MCC 27-5
2/3-2025	Concentrated Waste Pump		
2/3-2005	Waste Collection Pump	A6	MCC 27-5
2/3-B-2019	Waste Neutralizer Pump	D5	MCC 27-2
2/3-2020	Waste Concentrator	C3	MCC 27-2
	Feed Pump		
2/3-A-2019	Waste Neutralizer Pump	A5	MCC 27-2
2/3-2040	Decontamination Solution Pump		
2/3-5405	Off Gas Drain Pump	C4	MCC 27-4
2/3-2009 (A)	Waste Sample Pumps	C6	MCC 27-5
B 2/3-2009	Waste Sample Pumps	D3	MCC 27-2
C 2/3-2009	Waste Sample Pumps	D4	MCC 27-2

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic Suppression: None

4.3 Hose Reels: 2 - Hose Reels

4.4 Portable Extinguishers: 1 – Dry Chemical

5.0 Guidelines for Fire Attack:

- Establish command post Near the Radwaste Control Room el. 517'.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fan. Damper Controls at Local Panel in RW Bldg. Fan Room (529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs to the next floor at el. 517' -6" near the Control Room area.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: None

9.0 Construction:

- 9.1 Floor: concrete on exposed steel
- 9.2 Wall:
- a. North: 12" Concrete construction
 - b. South: 12" Concrete construction

- c. East: 12" Concrete construction
- d. West: 12" Concrete construction

9.3 Ceiling: Concrete on exposed steel

1.0 LOCATION

Radwaste Building
 Elevation 517'-6"
 Fire Zone 14.1
 Barrel Storage

2.0 ACCESS

Primary: From door on North wall of Turbine Bldg. near Condensate Demineralizers, el. 517'

Secondary: From exterior door on North wall of Radwaste Bldg. el. 517' through Radwaste Access Area.

3.0 HAZARDS

Fire: Cable Insulation, Cloth, Polyethylene, Paper, Wood, Lubricating Oil

Electrical: See 3.2

Other: Radioactive Equipment

4.0 FIRE PROTECTION EQUIPMENT

- 4 - Hose Reels
 (1 located in adjacent area)
- 1 - CO₂ Portable Extinguisher
- 12 - Dry Chemical Portable Extinguishers
 (4 located in adjacent area)

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post near Condensate Demineralizers el. 517'
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Caution: De-energize equipment
- Ventilate
- Overhaul
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: Control Room to Control Exhaust Fans. Damper controls at Local Panel in RW Bldg. Fan Room (529'-0" el.)

Manual: Utilize portable smoke ejectors and flexible ducting to exhaust smoke out door into hallway leading to the Radwaste Control Room el. 517'

7.0 EXPOSURES

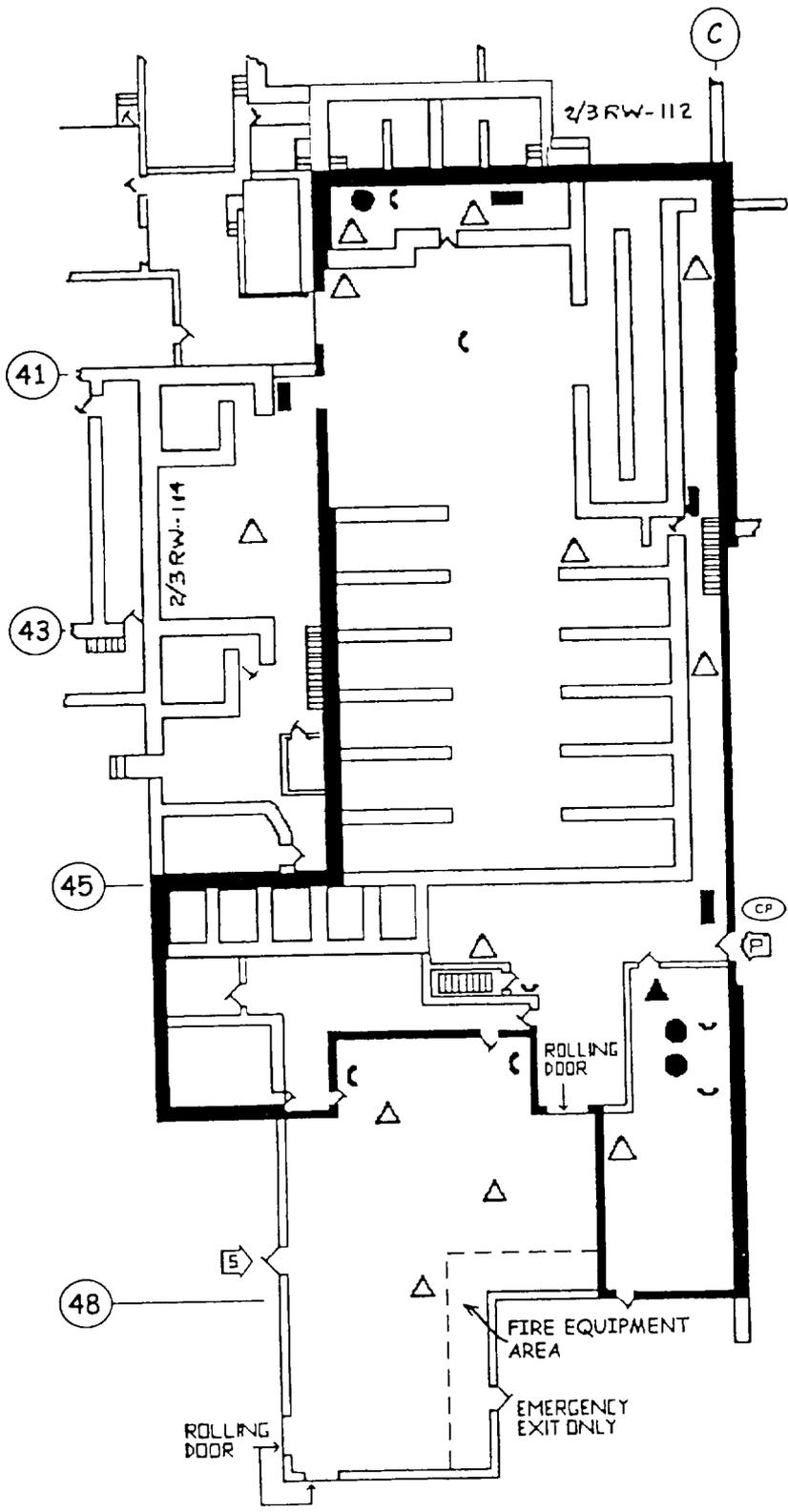
None

8.0 COMMUNICATIONS

3 P.A. Locations
 7 Extension Phones
 (2 located in adjacent area)
 Portable Radios

9.0 CONSTRUCTION

Concrete all sides



FIRE ZONE 14.1
 ELEVATION 517'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1 2/3RW-109 AT
 LEVEL BELOW

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Radwaste Building
Elevation 517'-6"
Fire Zone 14.1
Barrel Storage

2.0 Access:

- 2.1 Primary: From door on North Wall of Turbine Bldg. near Condensate Demineralizers, el 517'.
- 2.2 Secondary: From exterior door on North Wall of Radwaste Bldg. through Radwaste Access Area, el. 517'.

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating Oil	B
Tank Agitator	Lubricating Oil	B
Panels, Electrical Cables	Cable Insulation	A, C
--	Polyethylene	A
Clothing	Cloth	A
Barrel Discs	Paper	A
Lumber	Wood	A

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2043-9	Pre-coat Agitator	C7	MCC 27-5
2/3-2043-7A	Pre-coat Pump	A2	MCC 27-4
2/3-2037A	Caustic Addition Pump		
25-3	MCC 25-3	256D	480V Swgr 25
25-4	MCC 25-4	256D	480V Swgr 25
2/3-2099-100	Sample Return Pump		

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
26-5	MCC	265-D	480V Swgr 26
26-6	MCC	265-D	480V Swgr 26
27-2	MCC	275D	480V Swgr 27
27-4	Motor Control Center	276B	480V Swgr 27
27-5	Motor Control Center	276C	480V Swgr 27
27-3	Motor Control Center	276A	480V Swgr 27
2/3C	Radwaste Air Sparing Compressor	375B	480V Swgr 37
2043-2/3 A	Waste Coll. Filter Recycle Pump	C1	MCC 27-2
2043-2/3B	Waste Coll. Filter Recycle Pump	C2	MCC 27-2
2223-20	Fork Lift Battery Charger Cement Transfer Cont. Panel	C3 C2	MCC 27-4 MCC 27-5
2037A	Chemical Addition Pump	B4	MCC 27-5
2037B	Chemical Addition Pump	B6	MCC 27-5
2043-5	Floor Drain Filter Recycle Pump	C5	MCC 27-5

3.3 Hazardous Substances: Radioactive Equipment

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: 4 - Hose Reels (1 located in adjacent area)

4.4 Portable
Extinguishers: 1 - CO₂
12 - Dry Chemical (4 located in adjacent area)

5.0 Guidelines for Fire Attack:

- Establish command post near Radwaste Control Room el. 517'-6".
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fans. Damper controls at local Panel in RW BLdg. Fan Room (529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke thru door into Hallway leading to the Radwaste Control Room.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 3 P.A. Locations (1 is local only)
- 8.3 Telephone: 7 extension phones, two located in adjacent area

9.0 Construction:

- 9.1 Floor: Concrete on exposed steel
- 9.2 Wall:
- a. North: Concrete
 - b. South: Concrete
 - c. East: Concrete
 - d. West: Concrete
- 9.3 Ceiling: Concrete on exposed structural steel

1.0 LOCATION

Radwaste Building
Elevation 529'/544'
Fire Zone 14.1
Area "A" – Vent Fan Room
Area "B" – Cement Silo/Hopper Room

2.0 ACCESS

Primary: Area "A" - From door on North wall of Turb. Bldg. behind Turb. Cooling Water Heat Exch., el. 534'
Area "B" – From stairs on South wall of Radwaste Building el. 517'

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

2 - Hose Reels
1 – Dry Chemical Portable Extinguisher
el. 517'

6.0 VENTILATION

Fixed: Control Room to Control Exhaust Fans. Damper Controls at Local Panel in RW Bldg. Fan Room (529'-0")

Manual: Utilize portable smoke ejectors and flexible ducting to exhaust smoke to Turbine Building through door at el. 529'

8.0 COMMUNICATIONS

Portable Radios

3.0 HAZARDS

Fire: Lubricating Oil, Filters, Cotton, Paper, Wood, Cable Insulation

Electrical: See 3.2

Other: Radioactive Equipment

5.0 GUIDELINES FOR FIRE ATTACK

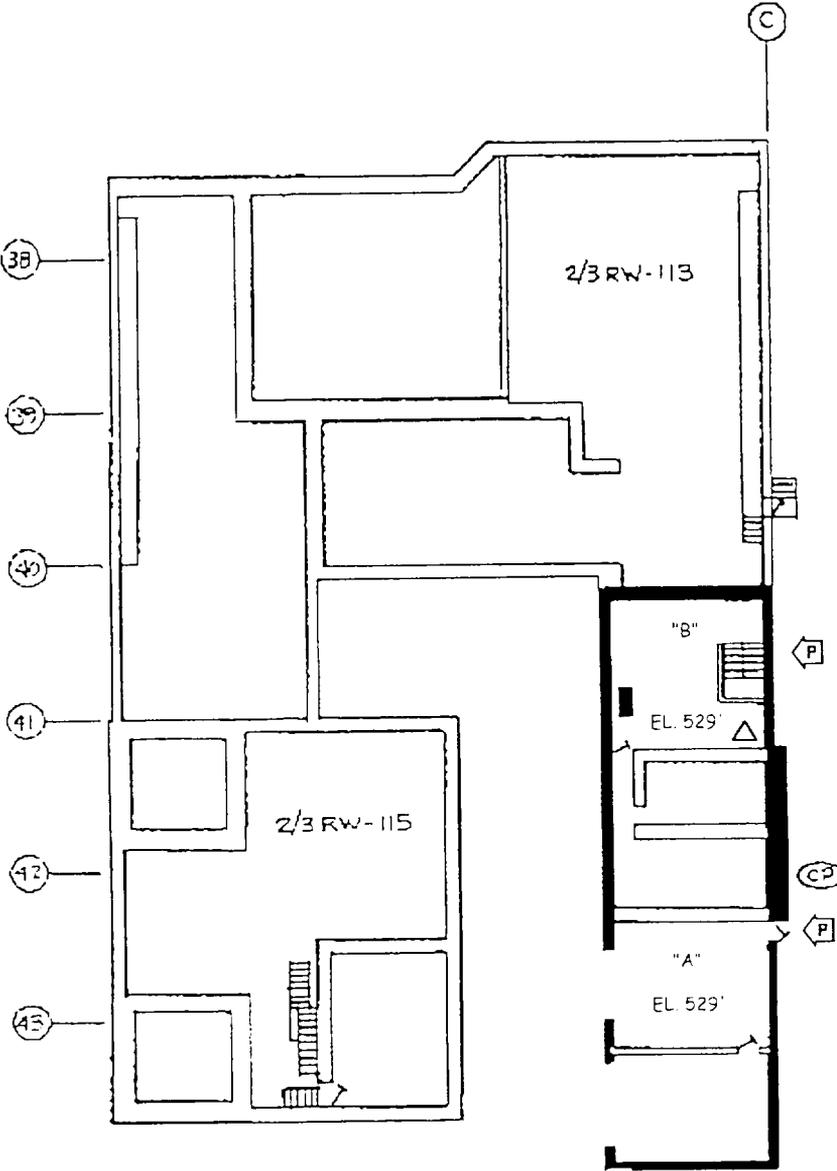
- Command Post in Turbine Bldg.
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for Victims
- Caution: De-energize equipment
- Ventilate -- Overhaul
- CAUTION: Combustible gap material

7.0 EXPOSURES

None

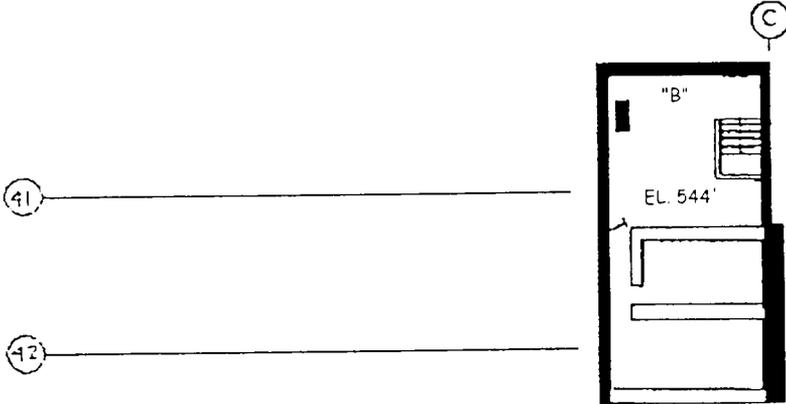
9.0 CONSTRUCTION

Floor/Ceiling - Concrete
Walls - Concrete/concrete block, except for North wall that is concrete/sheet metal on exposed steel



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- CP COMMAND POST
- PA LOCATIONS
- C TELEPHONE
- P PRIMARY ACCESS
- S SECONDARY ACCESS



COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

- 1.0 **Location:** Radwaste Building
Elevation 529'
Fire Zone 14.1
Area "A" – Vent Fan Room
Area "B" – Cement Silo/Hopper Room

2.0 **Access:**

- 2.1 **Primary:** Area "A" - From door on North wall of Turb. Bldg. behind the Turb. Cooling Water Heat Exchangers, el. 534'.
Area "B" – From stairs on South wall of Radwaste Building el. 517'

- 2.2 **Secondary:** None

3.0 **Hazards:**3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
Ventilation System	Filters	A
Panels, Electrical Cables	Cable insulation	A,C
Clothing	Cotton	A
Barrel discs	Paper	A
Lumber	Wood	A

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3A-5724	Radwaste Building Exchange Fan	C5	MCC 27-2
2/3B-5724	Radwaste Building Exchange Fan	D4	MCC 27-4
2/3C-5724	Radwaste Building Exchange Fan	D5	MCC 27-4
2/3-2065	Waste Hopper Control Panel	D2	MCC 27-4
2/3A-2065	Waste Hopper Control Panel	A5	MCC 27-5

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3B	Panel		
2/3A-2061	Centrifuge	B2	MCC 27-2
2/3B-2061	Centrifuge	E2	MCC 27-2
2/3A-5723	Radwaste Building Supply Fans	A3	MCC 27-2
2/3B-5723	Radwaste Building Supply Fans	B2	MCC 27-5
2/3C-5723	Radwaste Building Supply Fans	B1	MCC 27-5

3.3 Hazardous Substances: Radioactive Equipment

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic Suppression: None

4.3 Hose Reels: 2 - Hose Reels

4.4 Portable Extinguishers: 1 – Dry Chemical el. 517'

5.0 Guidelines for Fire Attack:

- Establish command post near door el. 534' in Turbine Building.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fans. Damper Controls at Local panel in RW Bldg Fan Room (529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke thru door el. 529'

7.0 Exposures: None**8.0 Communications:**

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: None

9.0 Construction:

- 9.1 Floor: Reinforced concrete
- 9.2 Wall:
- a. North: Concrete/sheet metal on exposed steel
 - b. South: Concrete/concrete block common with Turbine Building
 - c. East: Concrete
- 9.3 Ceiling: Reinforced concrete

1.0 LOCATION

Radwaste Building
Elevation 517'/514'
Fire Zone 14.5
Radwaste Control Room/Truck Lock

2.0 ACCESS

Primary: From door adjacent to
Barrel Storage Area NE
Corner, Radwaste Bldg., el.
517'

Secondary: From exterior Rolling
(Truck Bay) door on East
wall of Radwaste Bldg.,
el. 517'

3.0 HAZARDS

Fire: Cable Insulation

Electrical: See 3.2

Other: Radioactive Equipment

4.0 FIRE PROTECTION EQUIPMENT

- 2 - Hose Stations
(1 located in adjacent area)
- 2 - Halon Portable Extinguishers
- 6 - Dry Chemical
(3 located in adjacent area)

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post in Barrel Storage
Area' el. 517'
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose line
- Search Area for Victims
- Ventilate
- Overhaul

6.0 VENTILATION

Fixed: Control Room to Control
Exhaust Fans. Damper
controls at Local panel in RW.
Bldg. Fan Room (529'0" el.)

Manual: Utilize Portable Smoke
Ejectors and Flexible Ducting
to exhaust smoke into the
Truck Bay Area el. 517'

7.0 EXPOSURES

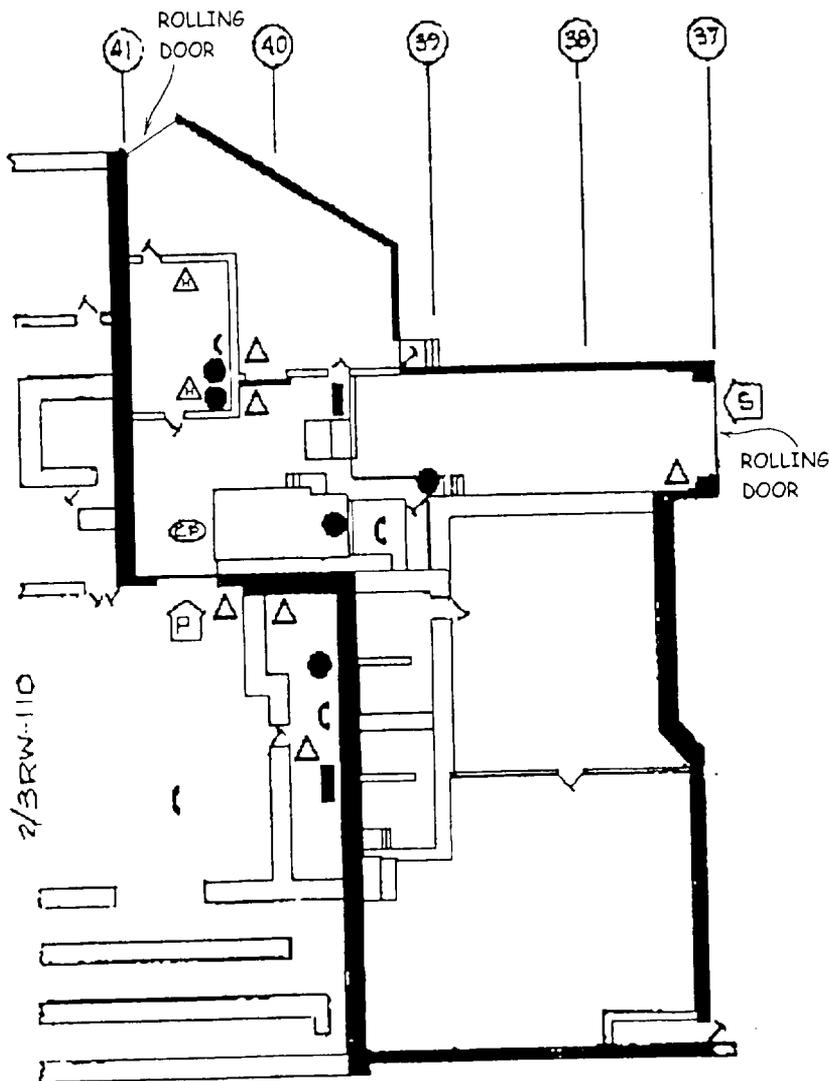
None

8.0 COMMUNICATIONS

- 5 P.A. Locations
(1 located in adjacent area)
- 4 Extension Phones
(2 located in adjacent area)
- Portable Radios

9.0 CONSTRUCTION

Concrete and/or concrete block all sides.



FIRE ZONE 14.5
ELEVATION 517' / 514"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- CO₂ HOSE LINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1. 2/3 RW-113 AT LEVEL BELOW

COMMONWEALTH EDISON CO.
 DRESDEN NUCLEAR UNITS 2 & 3
FIRE PRE-PLAN

1.0 Location: Radwaste Building
 Elevation 517'
 Fire Zone 14.5
 Radwaste Control Room/Truck Lock

2.0 Access:

- 2.1 Primary: From door adjacent to the Barrel Storage Area, Radwaste Bldg., el. 517'.
 Door is on the NE corner of the Barrel Storage
- 2.2 Secondary: From exterior Rolling Door in the Truck Bay Area on the East wall of
 Radwaste Bldg, el. 517'

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable Insulation	A, C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
158	Radwaste Rolling Door	K6	480V MCC 27-1

3.3 Hazardous Substances: Radioactive Equipment

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic Suppression: None

4.3 Hose Reels: 2 - Hose Stations (1 located in adjacent area)

4.4 Portable Extinguishers: 6 - Dry Chemical (3 located in adjacent area)
2 - Halon

5.0 Guidelines for Fire Attack:

- Establish command post in Barrel Storage Area at el. 517'-6".
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fans. Damper Controls at Local Panel in RW Bldg. Fan Room (529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to the truck bay area el. 517'.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 5 P.A. Locations (2 are local only), 1 located in adjacent area
- 8.3 Telephone: 4 Extension Phones, 2 located in adjacent area

9.0 Construction:

- 9.1 Floor: 24 inch concrete
- 9.2 Wall:
- a. North: Reinforced concrete/concrete blocks
 - b. South: Concrete/concrete block
 - c. East: 24 inch concrete
 - d. West: Concrete/concrete block
- 9.3 Ceiling: Concrete decking on exposed structural steel

1.0 LOCATION

Radwaste Building
 Elevation 529'-6"
 Fire Zone 14.5
 Solidification Building

2.0 ACCESS

Primary: From Barreling Area thru Stock Truck Bay to North Storage Bay Gate 2 or scissor gate. High Rad key needed to access area

Secondary: Door at SW corner of Solidification Building el. 529'-6". High Rad key needed to access area

3.0 HAZARDS

Fire: Cable Insulation Filters

Electrical: None

Other: None

4.0 FIRE PROTECTION EQUIPMENT

- 2 – Hose Stations located in adjacent areas
- 1 – Dry Chemical Portable Extinguisher located in adjacent area

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post in Stock Truck Bay
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Ventilate -- Overhaul
- Fire Watch

6.0 VENTILATION

Fixed: Control Room to Control Exhaust Fans. Damper controls at local panel in RW Bldg. Fan Room (529'-0" el.)

Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to stairs in SW Corner of Room

7.0 EXPOSURES

None

8.0 COMMUNICATIONS

Portable Radios
 2 Extension Phones nearby
 2 P.A. locations nearby

9.0 CONSTRUCTION

Floor - 24-inch concrete
 North and South Wall - concrete
 East - 24-inch concrete
 West - concrete with nonrated openings
 Ceiling - Concrete decking on exposed steel

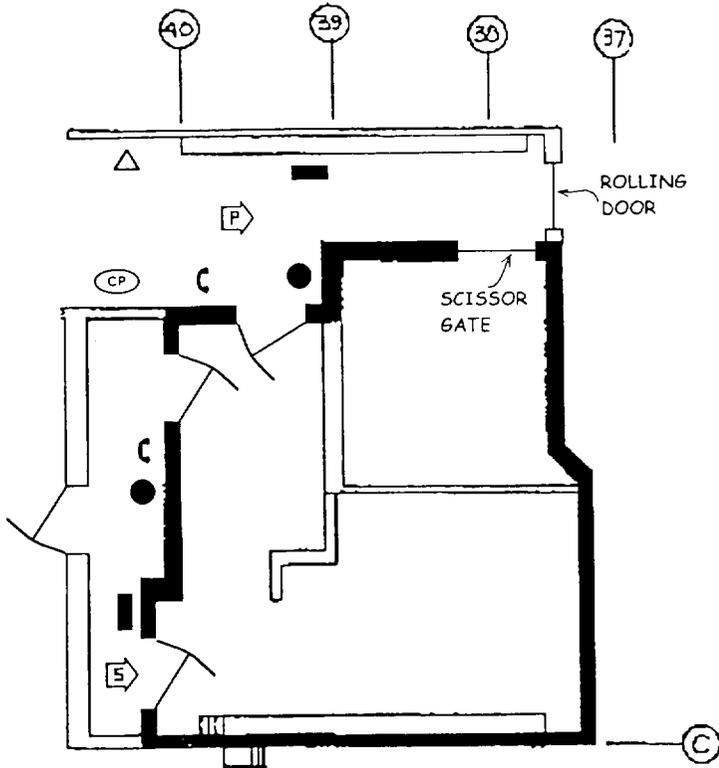
AMENDMENT 13

Pre-plan 2/3RW-113

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Rev. 4

FIRE ZONE 14.5
 ELEVATION 529'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▤ CO₂ HOSELINES
- ▬ HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Radwaste Building
Elevation 529'-6"
Fire Zone 14.5
Solidification Building

2.0 Access:

- 2.1 Primary: From Barreling Area through Stock Truck Bay to North Storage Bay Gate 2 or double scissor gate. High Rad key needed to access area
- 2.2 Secondary: Door at SW corner of Solidification Building el. 529'- 6". High Rad key needed to access area

3.0 Hazards:3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Ventilation System	Filters	A
Panels, Electrical Cables	Cable insulation	A,C

3.2 Electrical: None

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: 2 – Hose stations located in adjacent areas

4.4 Portable

Extinguishers: 1 – Dry Chemical located in adjacent area

5.0 Guidelines for Fire Attack:

- Establish command post in Stock Truck Bay el. 529' - 6".
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Provide a fire watch until fire detection system is returned to service.

6.0 Ventilation:

6.1 Fixed: Control Room to Control Exhaust Fans. Damper Controls at local panel in RW Bldg. Fan Room (529'-0" el.)

6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to stairs in SW Corner of Room.

7.0 Exposures: None

8.0 Communications:

8.1 Portable radios: OK to use

8.2 Public Address: 2 P.A. Locations located in adjacent areas

8.3 Telephone: 2 Extension Phones located in adjacent area

9.0 Construction:

9.1 Floor: 24-inch concrete, 3-hour fire rated

9.2 Wall:

- a. North: Reinforced concrete and solid concrete block
- b. South: Concrete and concrete block
- c. East: 24-inch concrete, 3-hour external fire rated metal siding
- d. West: Concrete with many nonrated openings

9.3 Ceiling: Concrete decking on exposed steel

1.0 LOCATION

Radwaste Building
Elevation 520'-0"
Fire Zone 14.6
Max Recycle

2.0 ACCESS

Primary: Double doors on North wall of Radwaste Bldg. Barrel Storage Area, el. 517'. Rad key needed to access Max Recycle Conc. Waste Trans Tank Room

Secondary: Exterior Door on North wall of Radwaste Bldg. (Card Key required), el. 517'. Rad key needed to access Max Recycle Conc. Waste Trans Tank Room

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil
Polyurethane

Electrical: See 3.2

Other: None

4.0 FIRE PROTECTION EQUIPMENT

4 - Hose Reels (1 located in adjacent area)
5 - Dry Chemical Portable Extinguishers (3 located in adjacent area)

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post in Barrel Storage area
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Ventilate and Overhaul
- Provide a Fire Watch
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: Control Room to Control Exhaust Fans. Damper controls at local panel in RW Bldg Fan Room

Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to exterior door on North Wall of Radwaste Bldg el. 517' or up stairs to el. 529'

7.0 EXPOSURES

None

8.0 COMMUNICATIONS

4 Extension Phones
2 P.A. Location
Portable Radios

9.0 CONSTRUCTION

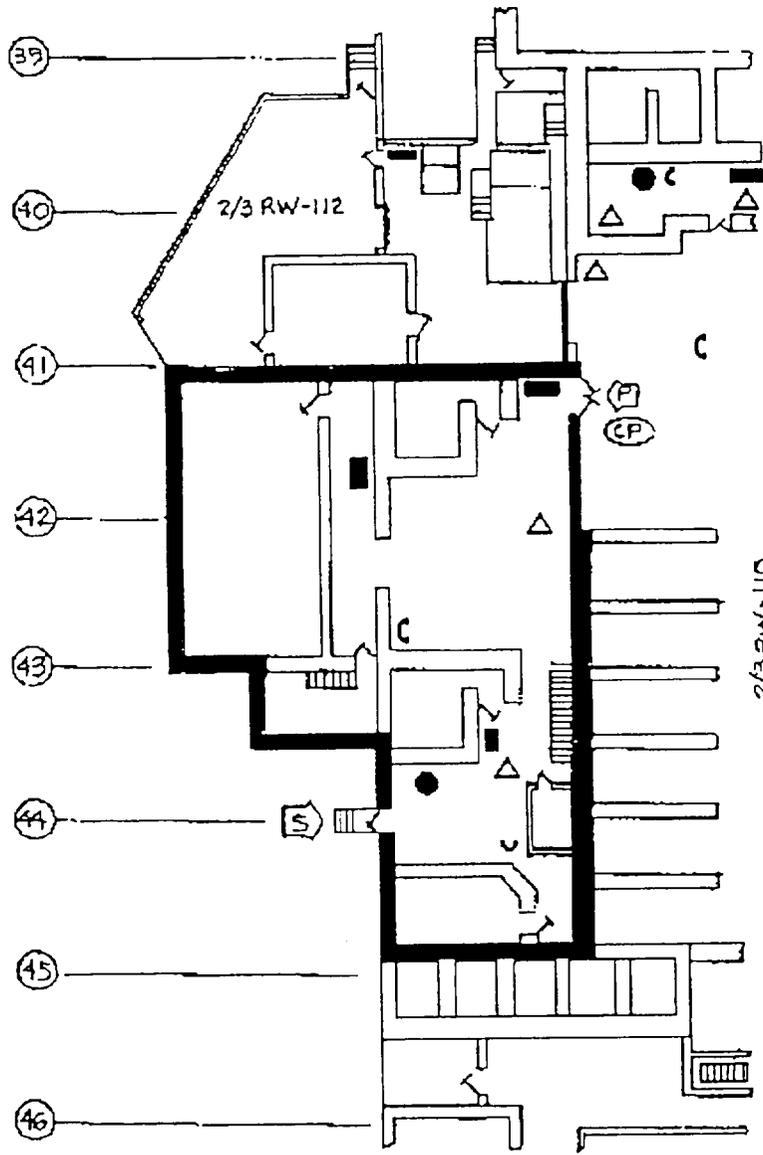
Floor and Ceiling consist of concrete on exposed steel
Walls are of concrete construction

AMENDMENT 13

Pre-plan 2/3RW-114

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Rev. 4



FIRE ZONE 14.6
ELEVATION 520'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

- 1. 2/3 RW-115 AT LEVEL ABOVE

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 **Location:** Radwaste Building
 Elevation 520'-0"
 Fire Zone 14.6
 Max Recycle

2.0 **Access:**

- 2.1 **Primary:** Double doors on North Wall of Radwaste Bldg. Barrel Storage Area, el. 517'.
 Rad key needed to access Max Recycle Conc. Waste Trans Tank Room
- 2.2 **Secondary:** Exterior Door (Card Key required) on North Wall of Radwaste Bldg el. 517'.
 Rad key needed to access Max Recycle Conc. Waste Trans Tank Room

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Electrical Cables	Cable insulation	A, C
Pumps	Lubricating oil	B
--	Polyurethane	A

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3-2012-351A 2/3A	Radwaste Building Condensate Return Pump 2/3A	E1	MCC 27-2
2/3-2012-351B	Radwaste Building Condensate Return Pump	A3	MCC 27-4

3.3 **Hazardous Substances:** None

3.4 **Physical Hazards:** None

3.5 **Life Safety:** None

4.0 Fire Protection Equipment:

- 4.1 Detection: None
- 4.2 Automatic Suppression: None
- 4.3 Hose Reels: 4 - Hose Reels (1 located in adjacent area)
- 4.4 Portable Extinguishers: 5 - Dry Chemical (3 located in adjacent area)

5.0 Guidelines for Fire Attack:

- Establish command post in Barrel Storage Area el. 517'.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: Control Room to control exhaust fans. Damper controls at local panel in RW Bldg. Fan Room (529'-O" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to exterior door on North Wall of Radwaste Bldg. el. 517' or up the stairs in area to el. 529'.

7.0 Exposures: None**8.0 Communications:**

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 2 P.A. Locations (1 located in adjacent area)
- 8.3 Telephone: 4 Extension Phones (2 located in adjacent area)

9.0 Construction:

9.1 Floor: Concrete on exposed steel

9.2 Wall:

- a. North: Concrete
- b. South: Concrete
- c. East: Concrete
- d. West: Concrete

9.3 Ceiling: Concrete on exposed steel

1.0 LOCATION

Radwaste Building
Elevation 540'
Fire Zone 14.6
Maximum Recycle Bldg.

2.0 ACCESS

Primary: From stairs near Stack Gas
Sample in Radwaste Bldg.
el. 517' to el. 540'.

Secondary: None

3.0 HAZARDS

Fire: Cable Insulation
Polyurethane
Filters

Electrical: See 3.2

Other: Radioactive Equipment

4.0 FIRE PROTECTION EQUIPMENT

1 - Hose Reel
2 - Dry Chemical Portable Extinguishers

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post near stairs el. 519'
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose line
- Search Area for victims
- Caution: De-energize equipment
- Ventilate
- Overhaul
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: Control Panel located at the
558'-0" el. of Max Recycle
Bldg.

Manual: Utilize Portable Smoke
Ejectors and Flexible Ducting
to exhaust smoke up stairs

7.0 EXPOSURES

None

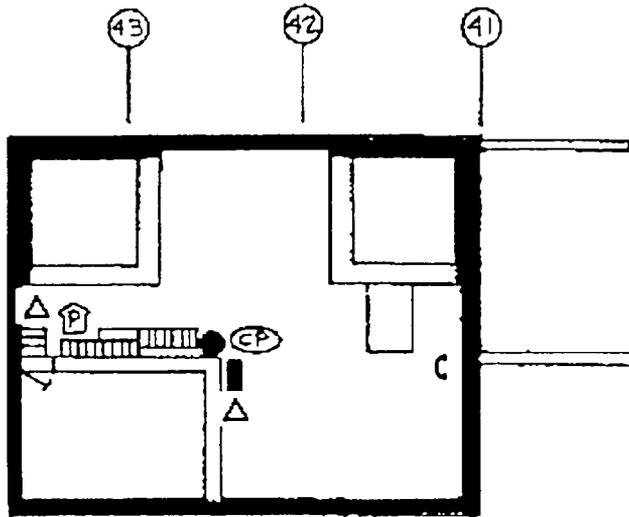
8.0 COMMUNICATIONS

1 P.A. Location
1 Extension Phone (on floor below)
Portable Radios

9.0 CONSTRUCTION

All Sides Concrete

FIRE ZONE 14.6
 ELEVATION 54'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▭ CO₂ HOSELINES
- HOSE REEL
- ⊙ COMMAND POST
- PA LOCATIONS
- ⊕ TELEPHONE
- ⌞ PRIMARY ACCESS
- ⌞ SECONDARY ACCESS

NOTES

1. 2/3 RW-114 AT LEVEL BELOW
2. 2/3 RW-117 AT LEVEL ABOVE

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 **Location:** Radwaste Building
 Elevation 540'
 Fire Zone 14.6
 Maximum Recycle Bldg.

2.0 **Access:**

2.1 **Primary:** From stairs near Stack Gas Sample Bldg. in Radwaste Bldg., el 517' up to elevation 540'.

2.2 **Secondary:** None

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable insulation	A, C
--	Polyurethane	A
Ventilation System	Filters	A

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
20-4	MCC		
20-5	MCC		
30-4	MCC		
30-5	MCC		
2/3-5700-45A	Exhaust Fans		
2/3-5700-45B	Exhaust Fans		
2/3-2012-412A	Concentrator Vapor Heads		
2/3-2012-412B	Concentrator Vapor Heads		
2/3-3398-101	Hot Water Heater		

3.3 **Hazardous Substances:** Radioactive Equipment

3.4 **Physical Hazards:** None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: 1 - Hose Reel

4.4 Portable
Extinguishers: 2 - Dry Chemical

5.0 Guidelines for Fire Attack:

- Establish command post near stairs el. 519'.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2 for Electrical Component Listings).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0 or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

6.1 Fixed: Operation of HVAC by Local Control Panel located at the 558'-0 el. of max recycle bldg. near stairs.

6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs.

7.0 Exposures: None

8.0 Communications:

8.1 Portable radios: OK to use

8.2 Public Address: 1 P.A. Location

8.3 Telephone: 1 Extension Phone located on floor below

9.0 Construction:

9.1 Floor: Structural Concrete

9.2 Wall:

- a. North: Concrete
- b. South: Concrete
- c. East: Concrete
- d. West: Concrete

9.3 Ceiling: Concrete

COMMONWEALTH EDISON CO.
 Dresden Units 2/3
 Pre-plan Summary

Pre-plan 2/3RW-116
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1.0 LOCATION

Radwaste Building
 Elevation 551'
 Fire Zone 14.5
 Unit 2/3 Stock Vent Room

2.0 ACCESS

Primary: From stairs on North wall of
 Unit 2 Turbine Bldg., el.
 534' to el. 551'

Secondary: None

3.0 HAZARDS

Fire: Filters
 Cable Insulation

Electrical: Dwgs not available

Other: Radioactive Equipment
 One means of Egress

4.0 FIRE PROTECTION EQUIPMENT

- 1 - Dry Chemical Portable Extinguisher
 (el. 549')
- 1 - Hose Reel (el. 534') located outside
 room
- 1 - CO₂ Portable Extinguisher located
 outside room

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post near stairs el. 529'
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2"
 line
- Search Area for Victims
- Ventilate
- Overhaul

6.0 VENTILATION

Fixed: Control Room to Control
 Exhaust Fans. Damper
 Controls at Local Panel in RW
 Bldg. Fan Room (529'-0" el.)

Manual: Utilize Portable Smoke
 Ejectors and Flexible Ducting
 to exhaust smoke thru
 doorway and to stairs

7.0 EXPOSURES

None

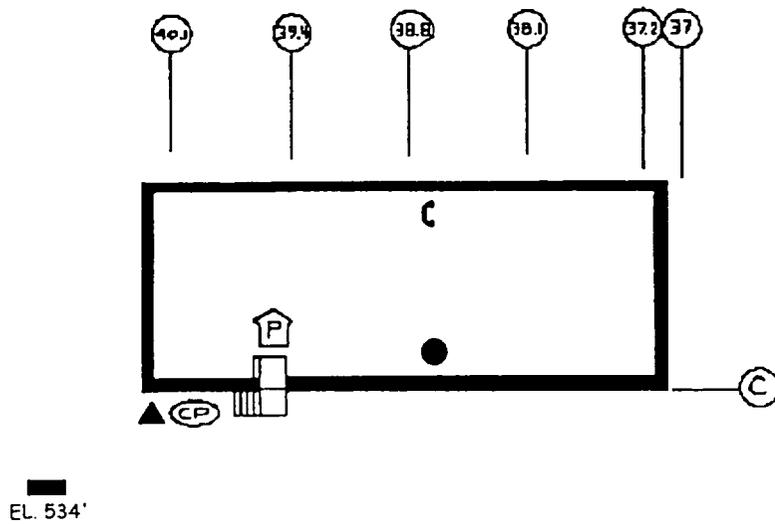
8.0 COMMUNICATIONS

- Portable Radios
- 1 Extension Phone
- 1 P.A. Location

9.0 CONSTRUCTION

South Wall/Floor - Concrete construction
 Ceiling is concrete on exposed steel
 North, East and West Walls – Sheet
 metal on exposed steel

FIRE ZONE 14.5
 ELEVATION 551'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3
FIRE PRE-PLAN

1.0 Location: Radwaste Building
Elevation 551'
Fire Zone 14.5
Unit 2/3 Stock Vent Room

2.0 Access:

- 2.1 Primary: From stairs and doorway on North wall of Unit 2 Turbine Bldg., el. 534' to el. 551'.
- 2.2 Secondary: None

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Ventilation System	Filters	A
Panels, Electrical Cables	Cable insulation	A,C

3.2 Electrical: No Drawings Available for Electrical Equipment

3.3 Hazardous Substances: Radioactive Equipment

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: 1 - Hose Reel (el. 534') located outside room

4.4 Portable Extinguishers: 1 - Dry Chemical (el. 549')
1 - CO₂ located outside room

5.0 Guidelines for Fire Attack:

- Establish command post near stairs at el. 529'-6" one level below area.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.

6.0 Ventilation:

- 6.1 Fixed: Control Room to Control Exhaust Fans Damper Controls at Local panel in RW Bldg. Fan Room (el. 529'-0" el.)
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke thru doorway and to stairs.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 1 P.A. Location
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

- 9.1 Floor: 24-inch concrete
- 9.2 Wall:
- a. North: Sheet metal on exposed steel
 - b. South: Concrete
 - c. East: Sheet metal on exposed steel
 - d. West: Sheet metal on exposed steel
- 9.3 Ceiling: Concrete

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

Pre-plan 2/3RW-117
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1.0 LOCATION

Radwaste Building
Elevation 558'-0"
Fire Zone 14.6
Max Recycle Bldg.

2.0 ACCESS

Primary: Stairs near the South wall of
the Stack Gas Sample
Bldg., el. 517' up to el. 558'.
Rad key needed to access
Concentrator rooms

Secondary: None

3.0 HAZARDS

Fire: Lubricating Oil
Filters, Polyurethane
Cable Insulation

Electrical: See 3.2

Other: None

4.0 FIRE PROTECTION EQUIPMENT

Detection: 7 Smoke Detectors
1 - Hose Reel
2 - Dry Chemical Portable Extinguishers

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at bottom of stairs
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose line
- Caution: De-energize equipment
- Search Area for Victims
- Ventilate and Overhaul
- Provide a Fire Watch
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: Operation of HVAC by Control
Panel located on 558' el. of
Max Recycle Bldg.

Manual: Utilize Portable Smoke
Ejectors and Flexible Ducting
to exhaust smoke to stairs

7.0 EXPOSURES

None

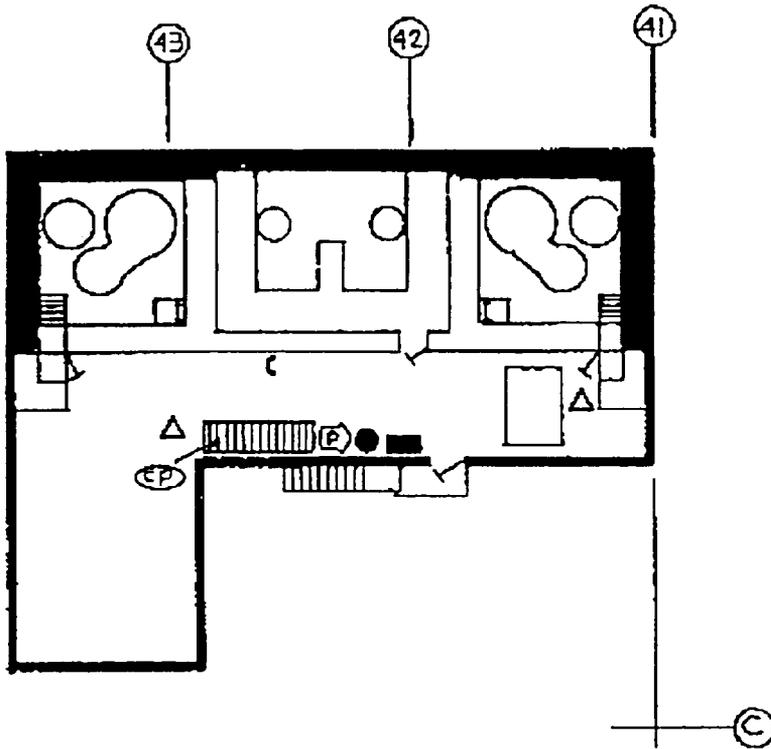
8.0 COMMUNICATIONS

1 P.A. Location
1 Extension Phone
Portable Radios

9.0 CONSTRUCTION

Walls/Floor - Concrete construction
Ceiling is concrete on exposed steel

FIRE ZONE 14.6
 ELEVATION 558'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓜ PRIMARY ACCESS
- Ⓜ SECONDARY ACCESS

NOTES

1. 2/3RW-11B AT LEVEL ABOVE
2. 2/3 RW-115 AT LEVEL BELOW

COMMONWEALTH EDISON CO.
 DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 **Location:** Radwaste Building
 Elevation 558'-0"
 Fire Zone 14.6
 Max Recycle

2.0 **Access:**

2.1 **Primary:** The stairs near the South wall of the Stack Gas Sample Bldg., el. 517' to el. 558'. Rad key needed to access Concentrator rooms

2.2 **Secondary:** None

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable insulation	A, C
Ventilation System Pumps	Filters Lubricating oil	A B
--	Polyurethane	A

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3-2012-413A	Concentrator Recirc. Pump		
2/3-2012-419A	Concentrator Heater		
2/3-2012-414A	Concentrators Condensers		
2/3-2012-414B	Concentrators Condensers		
2/3-2012-413B	Concentrator Recirc. Pump		
2/3-2012-419B	Conc. Heater		
2/3-5700-48	Heat Recovery Unit		
2/3-5700-43	Elect. Duct Heater		
2/3-5700-41	Air Handling Unit		
2/3-5700-42	Condensing Unit		

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: 7 Smoke Detectors

4.2 Automatic
Suppression: None

4.3 Hose Reels: 1 - Hose Reel

4.4 Portable
Extinguishers: 2 - Dry Chemical

5.0 Guidelines for Fire Attack:

- Establish command post bottom of stairs.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2 for Electrical Component Listings).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0 or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Provide a fire watch until fire detection system is returned to service.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

6.1 Fixed: As necessary, shut down HVAC to prevent spreading smoke. Control Panel at 558' el. of Max Recycle Bldg. near stairs.

6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to stairs.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 1 P.A. Location
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

- 9.1 Floor: Concrete construction
- 9.2 Wall:
- a. North: Concrete construction
 - b. South: Concrete construction
 - c. East: Concrete construction
 - d. West: Concrete construction
- 9.3 Ceiling: Concrete on exposed steel

1.0 LOCATION

Radwaste Building
 Elevation 579'-0"
 Fire Zone 14.6
 Max Recycle Bldg.

2.0 ACCESS

Primary: From stairs near South wall
 of Stack Gas Sample bldg.,
 el. 517' to el. 579'

Secondary: None

3.0 HAZARDS

Fire: None

Electrical: None

Other: One means of egress
 Radioactive Tanks

4.0 FIRE PROTECTION EQUIPMENT**5.0 GUIDELINES FOR FIRE ATTACK**

- Command Post near stairs el. 558'-0"
- S.C.B.A.
- Attack with Port. Ext., follow with
 1-1/2" hose line
- Search Area for Victims
- Ventilate
- Overhaul
- CAUTION: Combustible gap material

6.0 VENTILATION

Fixed: Operation of HVAC by Control
 Panel at 558' el. of Max
 Recycle Bldg. near stairs.

Manual: Utilize Portable Smoke
 Ejectors and Flexible Ducting
 to exhaust smoke to stairs.

7.0 EXPOSURES

None

8.0 COMMUNICATIONS

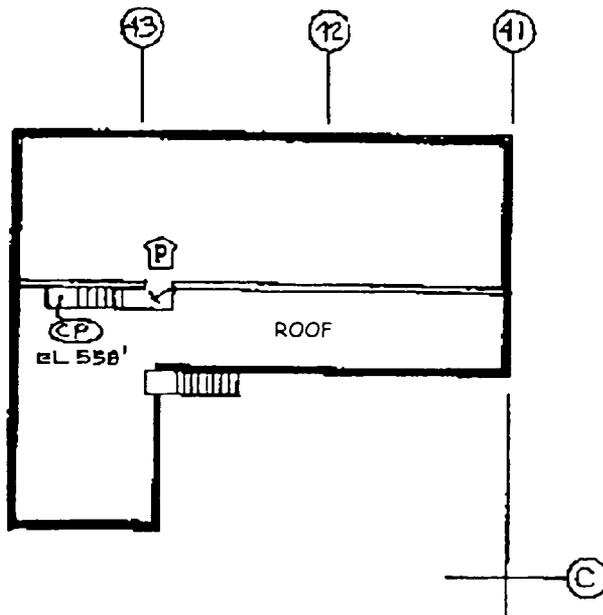
1 Extension Phone
 Portable Radios

9.0 CONSTRUCTION

Concrete, exposed structural steel Metal
 Siding

FIRE ZONE 14.6

ELEVATION 579'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1. 2/3RW-117 AT LEVEL BELOW

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3FIRE PRE-PLAN

1.0 Location: Radwaste Building
Elevation 579'
Fire Zone 14.6
Max Recycle

2.0 Access:

2.1 Primary: From stairs near South wall of Stack Gas Sample Bldg., el. 517' to el. 579' in Radwaste Bldg.

2.2 Secondary: None

3.0 Hazards:

3.1 Fire: None

3.2 Electrical: None

3.3 Hazardous Substances: Radioactive Tanks

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: None

4.4 Portable
Extinguishers: None

5.0 Guidelines for Fire Attack:

- Establish command post near stairs el. 558'-0" one level below.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- CAUTION: This area contains combustible materials at the gap between the tops of various walls and the ceiling that may cause hidden fire spread.

6.0 Ventilation:

- 6.1 Fixed: As necessary, shut down HVAC to prevent spreading smoke by Local Control Panel at el. 558'-0" of Max Recycle Bldg. near stairs.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to stairs.

7.0 Exposures: None**8.0 Communications:**

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

- 9.1 Floor: Concrete
- 9.2 Wall: Concrete on exposed steel
- a. North: Concrete
 - b. South: Concrete
 - c. East: Concrete
 - d. West: Concrete with nonrated openings
- 9.3 Ceiling: 2 ft. thick concrete

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

Pre-plan 2/3C-124
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SPECIAL NOTE:

Extra lengths (minimum 200') of hose need to be added to hose station prior to charging hose to reach center of this area (el. 490'- 8")

2.0 ACCESS

Primary: Stairs at East end of Crib House, el. 517' down to el. 490'-8"

Secondary: Stairs at West end of Crib House, el. 517' down to el. 490'-8"

4.0 FIRE PROTECTION EQUIPMENT

Detection: Thermal in cable trays and above 2/3 DG cooling water pump. Ionization in center of room

Suppression: Open Head Spray System in cable trays and above 2/3 DG cooling water pump. Wet Pipe Sprinklers over cable trays

2 - CO₂ Portable Extinguishers

6.0 VENTILATION

Fixed: Operation of Roof Ventil. Fans with Local Control.

Manual: Utilize portable smoke ejectors and flexible ducting to exhaust smoke to exterior door on West end of Crib House.

8.0 COMMUNICATIONS

2 Extension Phones
Portable Radios

1.0 LOCATION

Crib House, Units 2/3
Elevation 490'-8"
Fire Zone 11.3
Circulating Water Pumps Room

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil

Electrical: Crib House sump pump, low pressure service water hypochlorite pump 2/3A 3HP circulating water hypochlorite injection pump, service water booster dilution pump, DG Cooling Water Pumps (3) and Motors (3)

Other: None

5.0 GUIDELINES FOR FIRE ATTACK

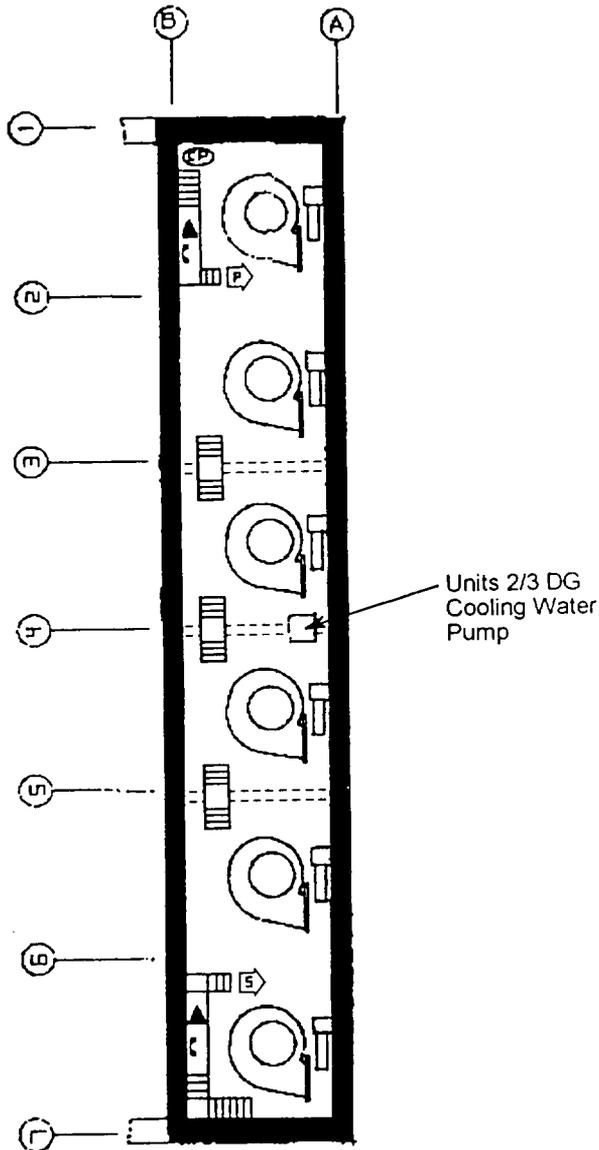
- Establish Command Post at top of stairs or outside of Bldg. if necessary
- Provide support for Sprinkler Systems
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- De-energize Electrical Equip.
- Ventilate and Overhaul
- Provide a person for surveillance for sprinkler valve and fire watch

7.0 EXPOSURES

Diesel Generator
Cooling Water Pumps (3)
and Motors (3)

9.0 CONSTRUCTION

Floor and ceiling are concrete. The surrounding Walls are of concrete construction



FIRE ZONE 11.3
 ELEVATION 490'-8"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▭ CO₂ HOSE LINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓜ PRIMARY ACCESS
- Ⓜ SECONDARY ACCESS

NOTES

1. 2/3C-125 AT LEVEL ABOVE
2. 2- DRY CHEM. EXT. ON EL. 517'
3. 2- CO₂ EXT. ON UPPER LEVEL, EL. 517'
4. 1 HOSE REEL ON EL. 517'

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 **Location:** Crib House
Elevation 490'-8"
Fire Zone 11.3
Circulating Water Pumps Room

2.0 **Access:**

- 2.1 **Primary:** Stairs at East end of Crib House, el. 517' down to el. 490'-8"
- 2.2 **Secondary:** Stairs at West end of Crib House, el. 517' down to el. 490'-8"

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
Panels, Electrical Cables	Cable insulation	A,C

3.2 **Electrical:**

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3 4506	Service Water Booster Dilution Pump	E5	MCC 20-2
2/3A-4504	Service Water Hypo-chlorite Injection Pumps	E4	20-2
2/3B-4504	Service Water Hypo-chlorite Injection Pumps	E4	MCC 30-2
2-3903A (2)	Diesel Generator Cooling Water Pump	A-2	MCC 29-2
2-3903B	Diesel Generator Cooling Water Pump		
2/3-3903A (2/3)	Diesel Generator Cooling Water Pump	D1	MCC 28-3
2/3-3903B	Diesel Generator Cooling Water Pump	C4	MCC 38-3

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
3-3903B	Diesel Generator Cooling Water Pump	C2	MCC 39-2
3-3903A	Diesel Generator Cooling Water Pump		
2/3-4408	Discharge Canal Water Sampling Pump	F1	MCC 30-2
3-4532	Hypochlorite System Sump Pump	G1	MCC 36-1
2/3A-4505	Service Water Hypochlorite Injection Pumps	E3	MCC 20-2
2/3B-4505	Service Water Hypochlorite Injection Pumps	E3	MCC 30-2
2-4532	Hypochlorite System Sump Pump	J1	480V MCC 26-1
2/3A 3905A	Crib House Sump Pump	E1	MCC 20-2
	Crib House Welder	C5	MCC 20-2
	Receptacle		

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: Thermal Detectors in cable trays and over 2/3 DG cooling water pump
Ionization Detectors in center of room

4.2 Automatic Suppression: Open Head Spray System above 2/3 DG cooling water pump
Wet Pipe Sprinkler System over cable trays

4.3 Hose Reels: None

4.4 Portable Extinguishers: 2 - CO₂

5.0 Guidelines for Fire Attack:

- Establish command post outside exterior door on East end of Crib House el. 517'.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.

- Caution should be used in applying water to avoid electrical shock.
- De-energize electrical equipment if possible (see Section 3.2 for electrical component listings).
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- **SPECIAL NOTE:** Extra lengths (minimum 200') of hose need to be added to hose station prior to charging hose to reach center of this area (el. 490'- 8")

6.0 Ventilation:

- 6.1 Fixed: Operation of Roof Ventilation with Local Control.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to exterior door at West end of Crib House, el. 517'.

7.0 Exposures: Diesel Generator Cooling Water Pumps and Motors 2-3903B, 3-3903B, 2/3-3903B

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 2 Extension Phones

9.0 Construction:

- 9.1 Floor: Concrete
- 9.2 Wall:
- a. North: 36" and 48" concrete
 - b. South: 36" concrete
 - c. East: 48" concrete
 - d. West: 48" concrete
- 9.3 Ceiling: Concrete slab with open stairwells and hatches.

SPECIAL NOTE:

Extra lengths (minimum 100') of hose need to be added to hose station prior to charging hose to reach center of this area (el. 509')

2.0 ACCESS

Primary: Stairs at East end of Crib House, to Service Water Pumps, el. 517 down to el. 509'

Secondary: Stairs at West end of Crib House, to Service Water Pumps, el. 517' down to el. 509'

4.0 FIRE PROTECTION EQUIPMENT

Detection: Thermal (local)

Suppression: Wet Pipe Sprinkler System
Open Head Water Spray System (local)

- 2 - Hose Reel (el. 517')
- 3 - CO₂ Portable Extinguishers (el. 517')
- 1 - Dry Chemical Portable Extinguishers (el. 517')

6.0 VENTILATION

Fixed: Operation of Roof Ventilation fans with local control.

Manual: Utilize portable smoke ejectors and flexible ducting to exhaust smoke to stairs to West exterior door el. 517'

8.0 COMMUNICATIONS

- 1 P.A. Location nearby
- 2 Extension Phones nearby
- Portable Radios

1.0 LOCATION

Crib House, Units 2/3
Elevation 509'-0"
Fire Zone 11.3
Service Water Pumps Room

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil
Diesel Fuel

Electrical: Traveling Screens

Other: None

5.0 GUIDELINES FOR FIRE ATTACK

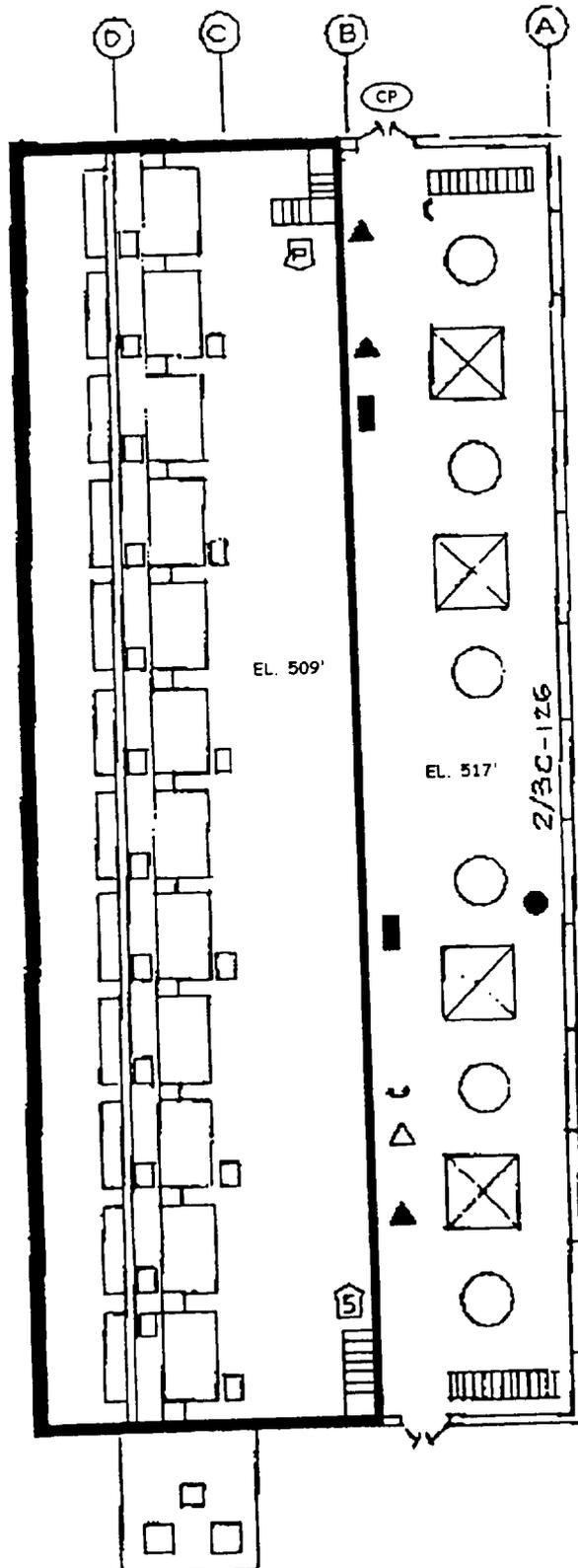
- Command Post outside East entrance door el. 517'
- Provide support for Sprinkler System
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- De-energize Electrical Equipment
- Ventilate and Overhaul
- Provide a person for surveillance for sprinkler valve and fire watch

7.0 EXPOSURES

None

9.0 CONSTRUCTION

Floor - concrete
Ceiling - concrete slabs on exposed steel
North, East, West Walls - Concrete block
South - Open above el. 517'-6"



FIRE ZONE 11.3
 ELEVATION 509'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1. 2/3C-124 AT LEVEL BELOW

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Crib House
 Elevation 509'-0"
 Fire Zone 11-3
 Service Water Pumps Room

2.0 Access:

- 2.1 Primary: Stairs at East end of Crib House, to Service Water Pumps, el. 517' down to el. 509'
- 2.2 Secondary: Stairs at West end of Crib House, to Service Water Pumps, el. 517' down to el. 509'

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
	Diesel Fuel	B
Panels, Electrical Cable	Cable insulation	A,C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
	Traveling Screen		480 MCC 20-2 & 30-2
2-A-4402	Traveling Screens	B1	MCC 20-2
2-B-4402	Traveling Screens	B2	MCC 20-2
2-C-4402	Traveling Screens	B3	MCC 20-2
2-D-4402	Traveling Screens	D1	MCC 20-2
2-E-4402	Traveling Screens	D2	MCC 20-2
2-F-4402	Traveling Screens	D3	MCC 20-2
3-A-4402	Traveling Screens	B1	MCC 30-2
3-B-4402	Traveling Screens	B2	MCC 30-2
3-C-4402	Traveling Screens	B3	MCC 30-2
3-D-4402	Traveling Screens	D1	MCC 30-2

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
3-E-4402	Traveling Screens	D2	MCC 30-2
3-F-4402	Traveling Screens	D3	MCC 30-2
	Trash Screen and	F2	MCC 30-2
	Recovery System Hoist		MCC 30-2
2/3 B-3905	Crib House Sump Pump	E1	MCC 30-2
2-A-3901	Service Water Pump	2308	4160V Swgr 23
2-B-3901	Service Water Pump	2406	4160V Swgr 24
2/3-A-3901	Service Water Pump	2408	4160V Swgr 24
2/3-B-3901	Service Water Pump	3404	4160V Swgr 34
3-A-3901	Service Water Pump	3308	4160V Swgr 33
3-B-3901	Service Water Pump	3407	4160V Swgr 34
2/3-4101	Diesel Driven Fire Pump		
2/3-A-4002	Screen Refuse Pumps	A1	MCC 20-3
2/3-B-4002	Screen Refuse Pumps	F5	MCC 30-2
	Trash Rack Traverse	A3	MCC 20-3
	and Hoist		
2/3-4409	Screen Refuse Aux. Sump Pump	E5	

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: Thermal Detectors above diesel fire pump

4.2 Automatic Suppression: Open Head Water Spray above diesel fire pump
Wet Pipe Sprinkler System

4.3 Hose Reels: 2 - Hose Reels (el. 517'), located in adjacent area

4.4 Portable Extinguishers: 3 - CO₂ (el. 517'), located in adjacent area
1 - Dry Chemical (el. 517') located in adjacent area

5.0 Guidelines for Fire Attack:

- Establish command post at outside entrance door on East side of Crib House el. 517'.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- If suppression system fails to actuate, manual actuation.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Caution should be used in applying water to avoid electrical shock.
- De-energize electrical equipment if possible (see Section 3.2 for electrical component listings).
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve located at 509' el. near Col B-3.
- Provide a fire watch until fire detection and suppression systems are returned to service.
- **SPECIAL NOTE:** Extra lengths (minimum 100') of hose need to be added to hose station prior to charging hose to reach center of this area (el. 509')

6.0 Ventilation:

- 6.1 Fixed: Operate Roof Ventilation Fans with Local control.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke at stairs to upper floor at el. 517'-6" then to exterior via West end of Bldg.

- 7.0 Exposures: Service Water Pumps: 2A, 2B, 2/3, 3A, 3B-3901
2/3 Diesel Fire Pump 2/3-4101
Service Water/Fire System Connection Valve 2-3906

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 1 P.A. Location in adjacent area
- 8.3 Telephone: 2 Extension Phones located in adjacent area

9.0 Construction:

- 9.1 Floor: Concrete

9.2 Wall:

- a. North: 11-5/8" concrete block with windows
- b. South: 11-5/8" open above el. 517'-6"
- c. East: 11-5/8" concrete block
- d. West: 11-5/8" concrete block

9.3 Ceiling: Built-up roofing on 3-1/2" precast concrete slabs on exposed steel

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

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1.0 LOCATION

Crib House, Units 2/3
Elevation 517'
Fire Zone 11.3
Ground Floor

2.0 ACCESS

Primary: From door at East end of
Crib House, el. 517'

Secondary: From door at West end of
Crib House, el. 517'

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil
Diesel Fuel Oil

Electrical: See 3.2

Other: None

4.0 FIRE PROTECTION EQUIPMENT

Detection: Thermal above Diesel Fire
Day Tank

Suppression: Wet Pipe Sprinkler
System
Water Spray over Diesel
Fire Day Tank

- 2 - Hose Reels
- 3 - CO₂ Portable Extinguishers
- 1 - Dry Chemical Portable Extinguisher

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post outside exterior door
at East end of crib house el. 517'
- Check Sprinkler System Actua-tion
- S.C.B.A.
- Attack with Port. Ext., follow with
1-1/2" hose line
- Search Area for victims
- Caution: De-energize equipment
- Ventilate
- Overhaul
- Position person at control valve
- Provide a Fire Watch

6.0 VENTILATION

Fixed: Operation of Roof ventilation
fans with Local Control.

Manual: Utilize portable smoke
ejectors and flexible ducting
to exhaust smoke through
door at West end of Crib
House el. 517'

7.0 EXPOSURES

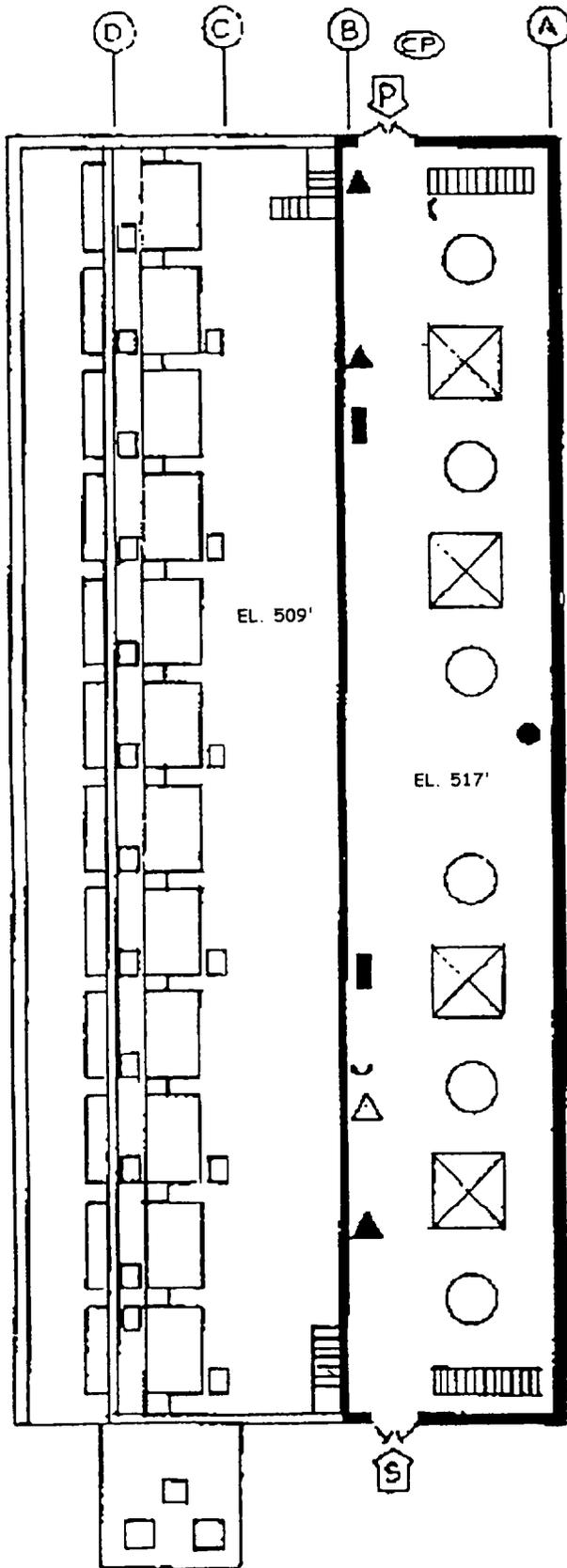
- Chemistry addition trailer on the
northeast corner of 2/3 cribhouse.
- Bulk tank of Sodium Hypochlorite.

8.0 COMMUNICATIONS

1 P.A. Location
2 Extension Phones
Portable Radios

9.0 CONSTRUCTION

Concrete on all sides with windows in
South wall



FIRE ZONE 11.3
 ELEVATION 517'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- ▬ HOSE REEL
- ⓔ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓢ SECONDARY ACCESS

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Crib House, Units 2/3
Elevation 517'-6"
Fire Zone 11.3
Ground Floor

2.0 Access:

2.1 Primary: From exterior door at East end of Crib House, el. 517'-6"

2.2 Secondary: From exterior door at West end of Crib House, el. 517'-6"

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating oil	B
Panels, Electrical Cables	Cable Insulation	A,C
Day Tank	Fuel Oil	B

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
	Diesel Generator		480V MCC 26-2
	Cooling H ₂ O Pumps and Motors		480V MCC 26-2
	Strainer and Trolley		480V MCC 26-2
	Beam		480V MCC 26-2
3-A-5725	Crib House Roof Exhaust Fan		480V MCC 26-2
3-B-5725	Crib House Roof Exhaust Fan		480V MCC 26-2
2-A-5725	Crib House Exhaust Fan		MCC 26-2
2-B-5725	Crib House Exhaust Fan		MCC 26-2

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2252-17	Traveling Screen Control Panel		MCC 26-2
	C.W. Pump Motor Space Heaters	C6	MCC 20-2
	C.W. Pump Motor Space Heaters	C6	MCC 30-2
2-A-4401	Circulating Water Pumps	2310	4160V
2-B-4401	Circulating Water Pumps Unit 2	2305	4160V Swgr 23
2-C-4401	Circulating Water Pumps Unit 2	2404	4160V Swgr 24
3-B-4401	Circulating Water Pumps Unit 3	3302	4160V Swgr 33
3-C-4401	Circulating Water Pump Unit 3	3405	4160V Swgr 34
3-A-4401	Circulating Water Pumps Unit 3	3305	4160V Swgr 33
30-2	480V Crib House MCC	?	480V Swgr 30
20-2	480V Crib House MCC	?	480V Swgr 20
20-3	480V Crib House MCC	?	480V Swgr 20
2/3-5777	Crib House Cond. Return Pump	B2	MCC 20-2
3A 5725	Crib House Roof	A1	MCC 30-2
3B-5725	Exh. Fans	A2	MCC 30-2
2A	Crib House Roof Ventilation	A1	MCC 20-2
2B	Crib House Roof Ventilation	A2	MCC 20-2
2/3 B 5784	Crib House Cond. Return Pump	E2	MCC 30-2
20	Crib House 480V Swgr 20	2402	4160V Swgr 24
30	Crib House 480V Swgr 30	3414	4160V Swgr 34
3.3	<u>Hazardous Substances:</u>		None
3.4	<u>Physical Hazards:</u>		None
3.5	<u>Life Safety</u>		None

4.0 Fire Protection Equipment:

- 4.1 Detection: Localized Thermal Detection above Diesel Fire Day Tank Pump
- 4.2 Automatic Suppression: Localized Water Spray above Diesel Fire Day Tank Pump
Wet Pipe Sprinkler System
- 4.3 Hose Reels: 2 - Hose Reels
- 4.4 Portable Extinguishers: 3 - CO₂
1 - Dry Chemical

5.0 Guidelines for Fire Attack:

- Establish command post outside exterior door at East end of Crib House el. 517'.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- If suppression system fails to actuate, manual actuation.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system' (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve located at 509' el. near Col. B-3.
- Provide a fire watch until fire detection and suppression systems are returned to service.

6.0 Ventilation:

- 6.1 Fixed: Operate Roof Ventilation Fans with Local Control
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke through door at West end of Crib House el. 517'.

- 7.0 Exposures: Chemistry addition trailer - combustible trailer exposes East side of Crib House and possible roof exposure.

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: 1 P.A. Location
- 8.3 Telephone: 2 Extension Phones

9.0 Construction:

- 9.1 Floor: Reinforced concrete with open stairwells and hatches
- 9.2 Wall:
 - a. North: Open
 - b. South: 11-5/8" concrete block with windows
 - c. East: 11-5/8" concrete block
 - d. West: 11-5/8" concrete block with metal equipment hatch
- 9.3 Ceiling: Unrated builtup roofing, insulated 3-1/2" precast concrete slabs on exposed structural steel with four fan openings.

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

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SPECIAL NOTE:

Extra lengths (minimum 200') of hose need to be added to hose station prior to charging hose to reach this area.

2.0 ACCESS

Primary: From stairs inside the Off-Gas Recombiner Bldg. to el. 476', 'R-58' Key needed for entry to Off-Gas Bldg.

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

- 1 - Hose Reel, el. 517'
- 1 - CO₂ Portable Extinguisher

6.0 VENTILATION

Fixed: Operation of HVAC by Control Room as needed. Fans can also be controlled locally.

Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs of Off-Gas Bldg. el. 517'

8.0 COMMUNICATIONS

Portable Radios
1 Extension Phone

1.0 LOCATION

Off-Gas Filter Building
Elevation 476'-0"
Fire Area 14.4
Equipment

3.0 HAZARDS

Fire: Cable Insulation

Electrical: See 3.2

Other: One means of egress

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post stairs of Bldg. el. 517' el. 497'-6" one level above
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Caution: De-energize equipment
- Ventilate
- Overhaul

7.0 EXPOSURES

None

9.0 CONSTRUCTION

Concrete on all sides

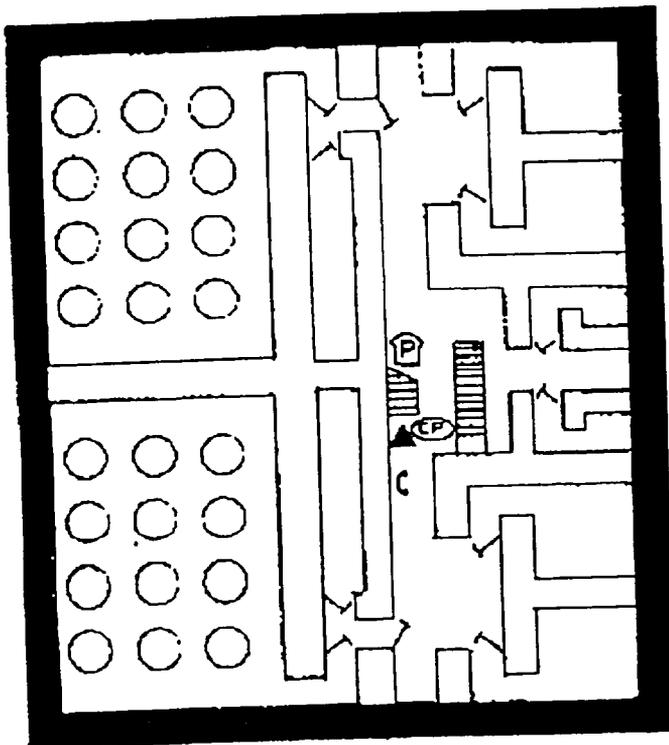
AMENDMENT 13

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FIRE ZONE 14.4
ELEVATION 476'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▭ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ⌒ TELEPHONE
- Ⓜ PRIMARY ACCESS
- Ⓜ SECONDARY ACCESS

NOTES

1. 2/30G-132 AT LEVEL ABOVE

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Off-Gas Filter Building
Elevation 476'-0"
Fire Area 14.4
Equipment

2.0 Access:

2.1 Primary: From stairs inside the Off-Gas Recombiner Bldg. to el. 476', 'R-58' Key needed for entry to Off-Gas Bldg.

2.2 Secondary: None

3.0 Hazards:3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable Insulation	A,C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2-2001-488A	Floor Drain Sump Pumps	D-4	MCC 20-1
3-2001-488B	Floor Drain Sump Pumps	C-4	MCC 30-1
2-2001-487B	Pressurized Tank Pumps	A-2	MCC 30-1
2-2001-487A	Pressurized Tank Pumps	D-2	MCC 20-1
3-2001-487A	Pressurized Tank Pumps	C-2	MCC 30-1
3-2001-487B	Pressurized Tank Pumps	F-2	MCC 20-1

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

- 4.1 Detection: None
- 4.2 Automatic Suppression: None
- 4.3 Hose Reels: 1 - Hose Reel (el. 517)
- 4.4 Portable Extinguishers: 1 - CO₂

5.0 Guidelines for Fire Attack:

- Establish command post near stairs at the 517' el. or outside if necessary.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2 for Electrical Component Listings).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0 or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- **SPECIAL NOTE:** Extra lengths (minimum 200') of hose need to be added to hose station prior to charging hose to reach this area.

6.0 Ventilation:

- 6.1 Fixed: As necessary, have control room shut down HVAC to prevent spreading smoke or change HVAC to smoke exhaust mode, vent fans can also be controlled locally.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs el. 517'.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

9.1 Floor: Concrete on grade

9.2 Wall:

- a. North: Concrete
- b. South: Concrete
- c. East: Concrete
- d. West: Concrete

9.3 Ceiling: Concrete

SPECIAL NOTE:

Extra length (minimum 100') of hose needs to be added to hose station prior to charging hose to reach this area.

2.0 ACCESS

Primary: Stairs inside the West Wall of Off-Gas Recombiner Bldg. el. 517' down to el. 497' 'R-58' Key needed for entry.

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

- 1 - Hose Reel (el. 517')
- 2 - CO₂ Portable Extinguishers, one located on el. 517

6.0 VENTILATION

Fixed: Operation of HVAC by Control Room as needed can also control vent fans locally

Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs of Off-Gas Building

8.0 COMMUNICATIONS

- 2 P.A. Location
- 1 Extension Phone
- Portable Radios

1.0 LOCATION

Off-Gas Filter Building
Elevation 497'-0"
Fire Area 14.4
Agitator Area

3.0 HAZARDS

Fire: Cable Insulation

Electrical: See 3.2

Other: None

5.0 GUIDELINES FOR FIRE ATTACK

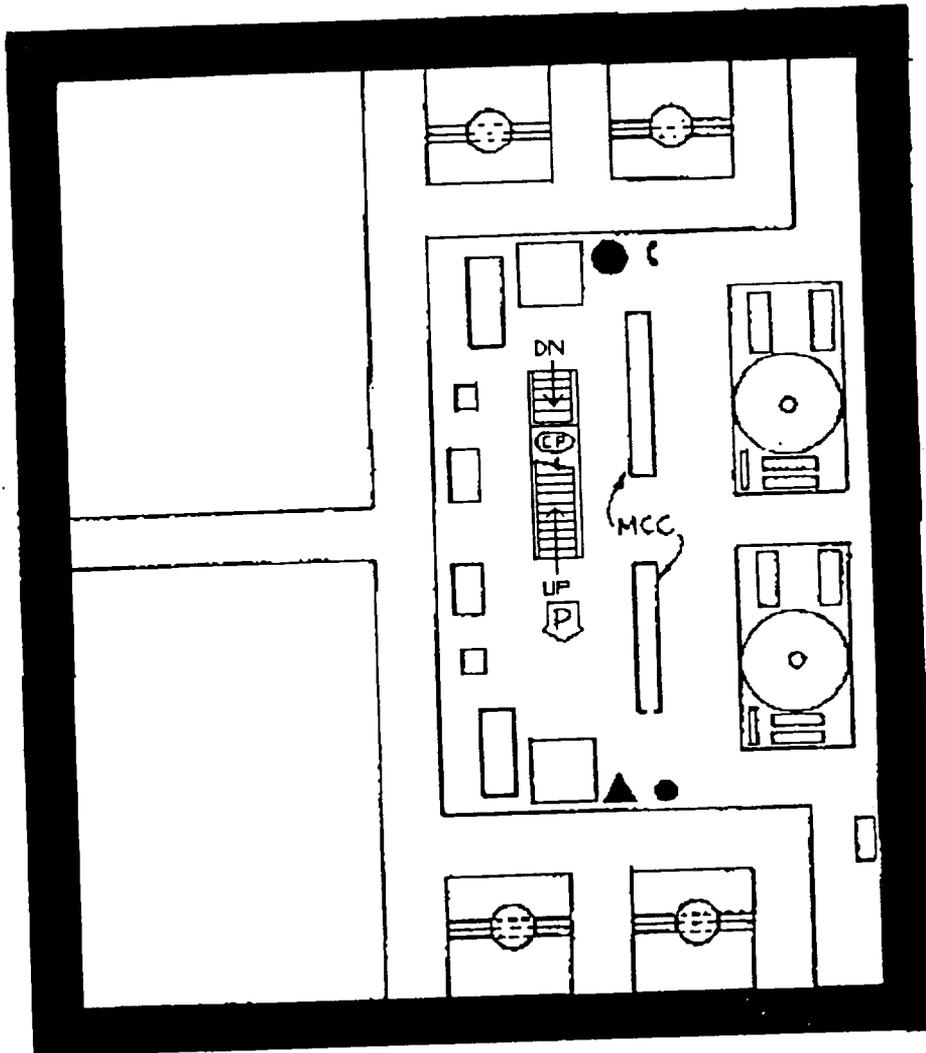
- Command Post at top of stairs or outside Bldg. if necessary
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Caution: De-energize equipment
- Ventilate and Overhaul
- Provide Fire Watch

7.0 EXPOSURES

None

9.0 CONSTRUCTION

Floor, Ceiling and Walls are Concrete on exposed steel



FIRE ZONE 14.4
ELEVATION 497'-0"



LEGEND

- ▲ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▭ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1. 2/30G-133 AT LEVEL ABOVE
2. 2/30G-131 AT LEVEL BELOW

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Off-Gas Filter Building
Elevation 497'-0"
Fire Area 14.4
Agitator Area

2.0 Access:

2.1 Primary: From stairs inside the West wall of the Off-Gas Recombiner to el. 497'.
'R-58' Key needed for entry.

2.2 Secondary: None

3.0 Hazards:3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable Insulation	A,C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
3A-5417	GLYCOL Pumps	F-2	MCC 30-1
3B-5417	GLYCOL Pumps	E-1	MCC 30-1
2A-5417	GLYCOL Pumps	A-2	MCC 20-1
2B-5417	GLYCOL Pumps	B-1	MCC 20-1
2-5418	Agitator	A-4	MCC 20-1
3-5418	Agitator	F-4	MCC 30-1
20-1	MCC 20-1	A-1	MCC 20
30-1	MCC 30-1		

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress

4.0 Fire Protection Equipment:

- 4.1 Detection: None
- 4.2 Automatic Suppression: None
- 4.3 Hose Reels: 1 - Hose Reel (el. 517)
- 4.4 Portable Extinguishers: 2 - CO₂ Portable Extinguishers (one located on el. 517')

5.0 Guidelines for Fire Attack:

- Establish command post at top of stairs or outside if necessary.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- De-energize electrical equipment if possible (see Section 3.2 for Electrical Component Listings).
- Caution should be used in applying water to avoid electrical shock.
- Ventilate area--utilize fixed ventilation system (see Section 6.0 or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- **SPECIAL NOTE:** Extra length (minimum 100') of hose needs to be added to hose station prior to charging hose to reach this area.

6.0 Ventilation:

- 6.1 Fixed: As necessary, have control room shut down HVAC to prevent spreading smoke can also control Vent Fans locally.
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke up stairs of Off-Gas Bldg.

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use.
- 8.2 Public Address: 2 P.A. Locations
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

9.1 Floor: Concrete

9.2 Wall:

- a. North: Concrete
- b. South: Concrete
- c. East: Concrete
- d. West: Concrete

9.3 Ceiling: Concrete

2.0 ACCESS

Primary: From door at South Side of Off-Gas Recombiner Bldg., el. 517' 'R-58' Key needed for entry.

Secondary: From door at North Side of Off-Gas Recombiner Bldg., el. 517' 'R-58' Key needed for entry

4.0 FIRE PROTECTION EQUIPMENT

Detection: Ionization
1 - CO₂ Portable Extinguisher
1 - Hose Station

6.0 VENTILATION

Fixed: Operation of HVAC by Control Room as needed. Can also switch to local control of ventilation.

Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke through door at South entrance of Bldg., el. 517'

8.0 COMMUNICATIONS

1 Extension Phone
Portable Radios

1.0 LOCATION

Off-Gas Filter Building
Elevation 517'-6"
Fire Area 14.4
Ventilation Equipment Room

3.0 HAZARDS

Fire: Cable Insulation

Electrical: See 3.2

Other: None

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post outside exterior door at South Side of Bldg. el. 517'
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Ventilate
- Overhaul
- Fire Watch

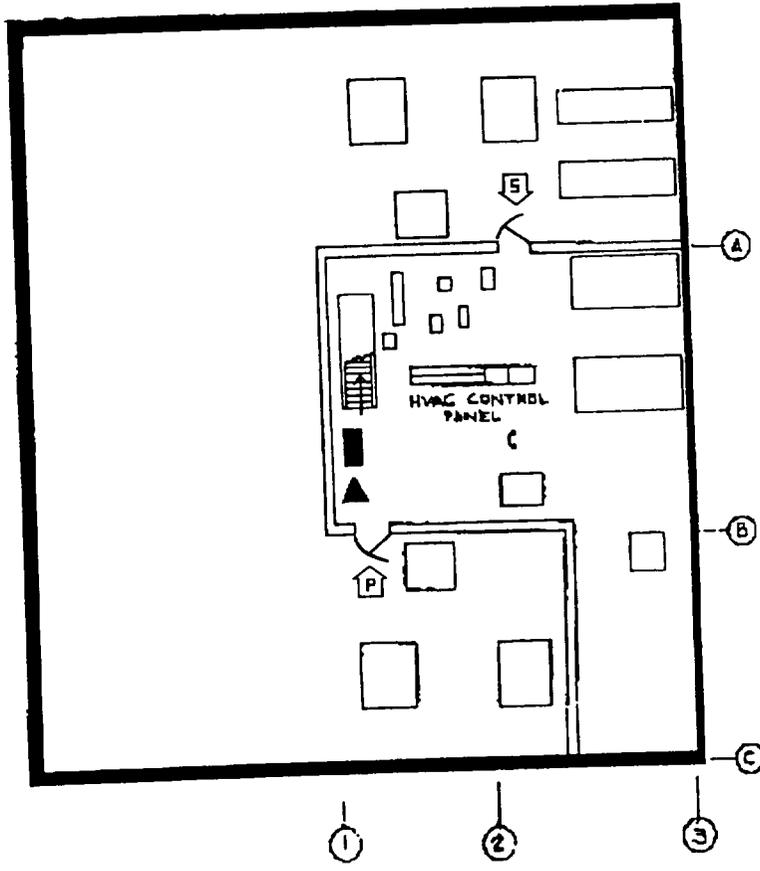
7.0 EXPOSURES

None

9.0 CONSTRUCTION

Walls - Metal Siding
Floor/Ceiling - Concrete

FIRE ZONE 14.4
ELEVATION 517'-6"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSE LINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- ☎ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

NOTES

1. 2/3 OG-132 AT LEVEL BELOW

COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3
FIRE PRE-PLAN

1.0 Location: Off-Gas Building
Elevation 517'-6"
Fire Area 14.4
Ventilation Equipment Room

2.0 Access:

- 2.1 Primary: From door on South Side of Off-Gas Bldg., el. 517' 'R-58' Key needed for entry.
- 2.2 Secondary: From door on North Side of Off-Gas Bldg., el. 517' 'R-58' Key needed for entry.

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Panels, Electrical Cables	Cable Insulation	A,C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
2/3-9302	Seal Pump	C-2	MCC 20-1
2/3-9301	Vacuum Pump	B-6	MCC 20-1

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: None

4.0 Fire Protection Equipment:

4.1 Detection: Ionization Detectors

- 4.2 Automatic
Suppression: None
- 4.3 Hose Reels: 1 - Hose Station
- 4.4 Portable
Extinguishers: 1 - CO₂

5.0 Guidelines for Fire Attack:

- Establish command post outside exterior door on South Side el. 517'.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Provide a fire watch until detection system is returned to service.

6.0 Ventilation:

- 6.1 Fixed: As necessary, have control room shut down HVAC to prevent spreading smoke. Can also switch to local control of ventilation (el. 517')
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke through door at South side of Bldg. el. 517'

7.0 Exposures: None

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: No handset available
- 8.3 Telephone: 1 Extension Phone

9.0 Construction:

- 9.1 Floor: Concrete

9.2 Wall:

- a. North: Metal Siding
- b. South: Metal Siding
- c. East: Metal Siding
- d. West: Metal Siding

9.3 Ceiling: 24" Concrete panels

SPECIAL NOTE:

Extra length (minimum 100') of hose needs to be added to hose station prior to charging hose to reach Screen Wash Area.

2.0 ACCESS

Primary: Door at south wall in Unit 1 Crib House, DS key needed to access area.

Secondary: None

4.0 FIRE PROTECTION EQUIPMENT

Suppression: Automatic Sprinkler System

- 1 - Hose Reel (2nd floor, el. 517')
- 2 - CO₂ Portable Extinguishers (1 each floor)

6.0 VENTILATION

Fixed: Operation of HVAC by local panel (el. 517') as needed.

Manual: Utilize portable smoke ejectors and flexible ducting to exhaust smoke to exterior via door at North wall.

8.0 COMMUNICATIONS

1 Extension Phone
Portable Radios

1.0 LOCATION

Crib House Unit 1
Elevation 517'

3.0 HAZARDS

Fire: Cable Insulation
Lubricating Oil
Fuel Oil

Electrical: Fire pump, CWP (2)
Misc. pumps

Other: One means of egress

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post outside of north door
- Provide support for sprinkler system
- S.C.B.A.
- Attack with Port. Ext., follow with 1-1/2" hose line
- Search Area for victims
- Ventilate and Overhaul
- Provide standby at valve
- Provide fire watch

7.0 EXPOSURES

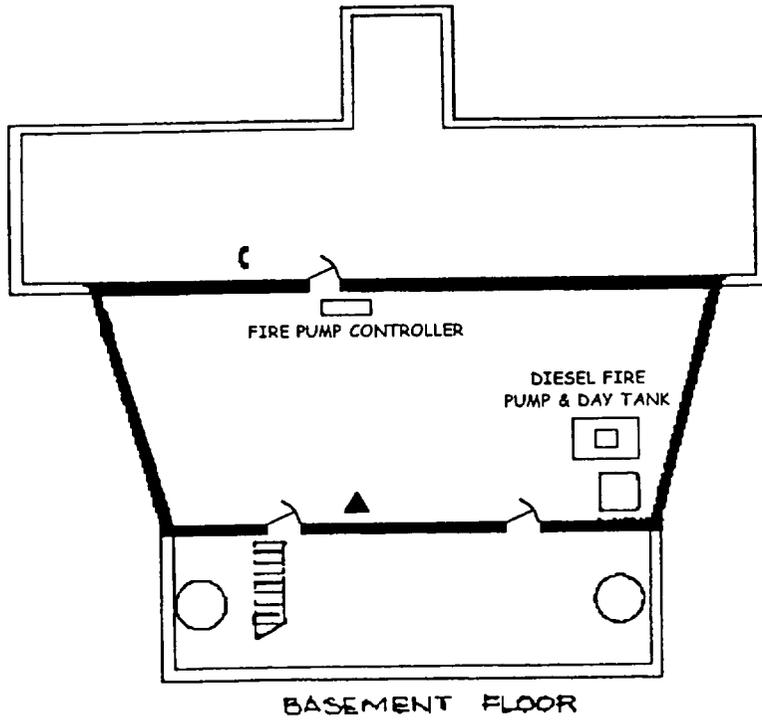
Diesel Fire Pump Fuel Oil Day Tank

9.0 CONSTRUCTION

Floor and ceiling are concrete on exposed steel. The surrounding walls are of concrete construction.

UNIT 1 CRIB HOUSE

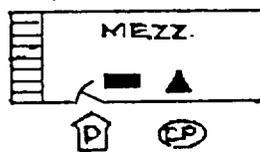
FIRE ZONE 11-3
 ELEVATION 517'-0"



LEGEND

- △ HALON EXTINGUISHER
- △ DRY CHEM EXTINGUISHER
- ▲ CO₂ FIRE EXTINGUISHER
- H₂O FIRE EXTINGUISHER
- ▣ CO₂ HOSELINES
- HOSE REEL
- Ⓢ COMMAND POST
- PA LOCATIONS
- Ⓒ TELEPHONE
- Ⓟ PRIMARY ACCESS
- Ⓠ SECONDARY ACCESS

1ST FLOOR



COMMONWEALTH EDISON CO.
DRESDEN NUCLEAR UNITS 2 & 3

FIRE PRE-PLAN

1.0 Location: Unit 1 Crib House
Elevation 517'

2.0 Access:

2.1 Primary: Door at south wall in Unit 1 Crib House. DS key needed to access area

2.2 Secondary: None

3.0 Hazards:

3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Pumps	Lubricating Oil	B
Fire Pump Day Tank	Fuel Oil	B
Panels, Electrical Cables	Cable Insulation	A,C

3.2 Electrical:

<u>Component Number</u>	<u>Component Description</u>	<u>Circuit Breaker</u>	<u>Power Supply</u>
	Fire Pump CWP		

3.3 Hazardous Substances: None

3.4 Physical Hazards: None

3.5 Life Safety: One means of egress. Entrapment possible.

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic Suppression: Automatic sprinkler system in Fire Pump Room

4.3 Hose Reels: 1 - Hose Reel elevation 517'

4.4 Portable Extinguishers: 2 - CO₂ (one on upper elev. 517')

5.0 Guidelines for Fire Attack:

- Establish command post outside or North door of area.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- If suppression system fails to actuate, manual actuation.
- Self-contained breathing apparatus should be used by all personnel.
- Initial attack should be made with portable extinguishers backed up by a 1-1/2" hose line.
- Search entire area for possible victims.
- Caution should be used in applying water to avoid electrical shock.
- De-energize electrical equipment if possible (see Section 3.2 for electrical component listings).
- Ventilate area--utilize fixed ventilation system (see Section 6.0) or place portable smoke ejectors at personnel doors.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve located at 509' el. near Col B-3.
- Provide a fire watch until fire suppression system is returned to service.
- **SPECIAL NOTE:** Extra length (minimum 100') of hose needs to be added to hose station prior to charging hose to reach Screen Wash Area.

6.0 Ventilation

- 6.1 Fixed: As necessary, shut down HVAC to prevent spreading smoke or change HVAC to smoke exhaust mode by Local Control Panel at el. 517'-0".
- 6.2 Manual: Utilize Portable Smoke Ejectors and Flexible Ducting to exhaust smoke to exterior of building.

7.0 Exposures: Diesel Fire Pump Fuel Oil Day Tank.

8.0 Communications:

- 8.1 Portable radios: OK to use
- 8.2 Public Address: None
- 8.3 Telephone: 1 Extension Phone located South wall of Screen Wash Area

9.0 Construction:

- 9.1 Floor: Concrete
- 9.2 Wall:
- a. North: Concrete
 - b. South: Concrete
 - c. East: Concrete
 - d. West: Concrete
- 9.3 Ceiling: Concrete on exposed steel

1.0 LOCATION

Unit 3 Transformer Area
Elevation 517'-6"
Fire Zones 18.1.1 TR3
 18.2.1 TR31
 18.3.1 TR32

2.0 ACCESS

Primary: North from 2/3
 Radwaste around 2/3
 Boilerhouse along access
 road

Secondary: West from outside U3
 Turb Bldg., along access
 road

See Note

3.0 HAZARDS

Fire: Transformer Oil

Electrical: Transformers (3)

Other: Hydrogen Line
 Oxygen Line

4.0 FIRE PROTECTION EQUIPMENT

Detection: Thermal
Suppression: Deluge system over
transformers
Hydrants along west yard loop

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at north road near 2/3 boilerhouse or near wastewater building
- Check Suppression System
- S.C.B.A. (depending on wind direction)
- Attack with 1 1/2" hand lines to back up suppression system
- Search area for victims
- Overhaul. Provide a fire watch

6.0 VENTILATION

Fixed: None. Open area North of 3 turbine building

Manual: None

7.0 EXPOSURES

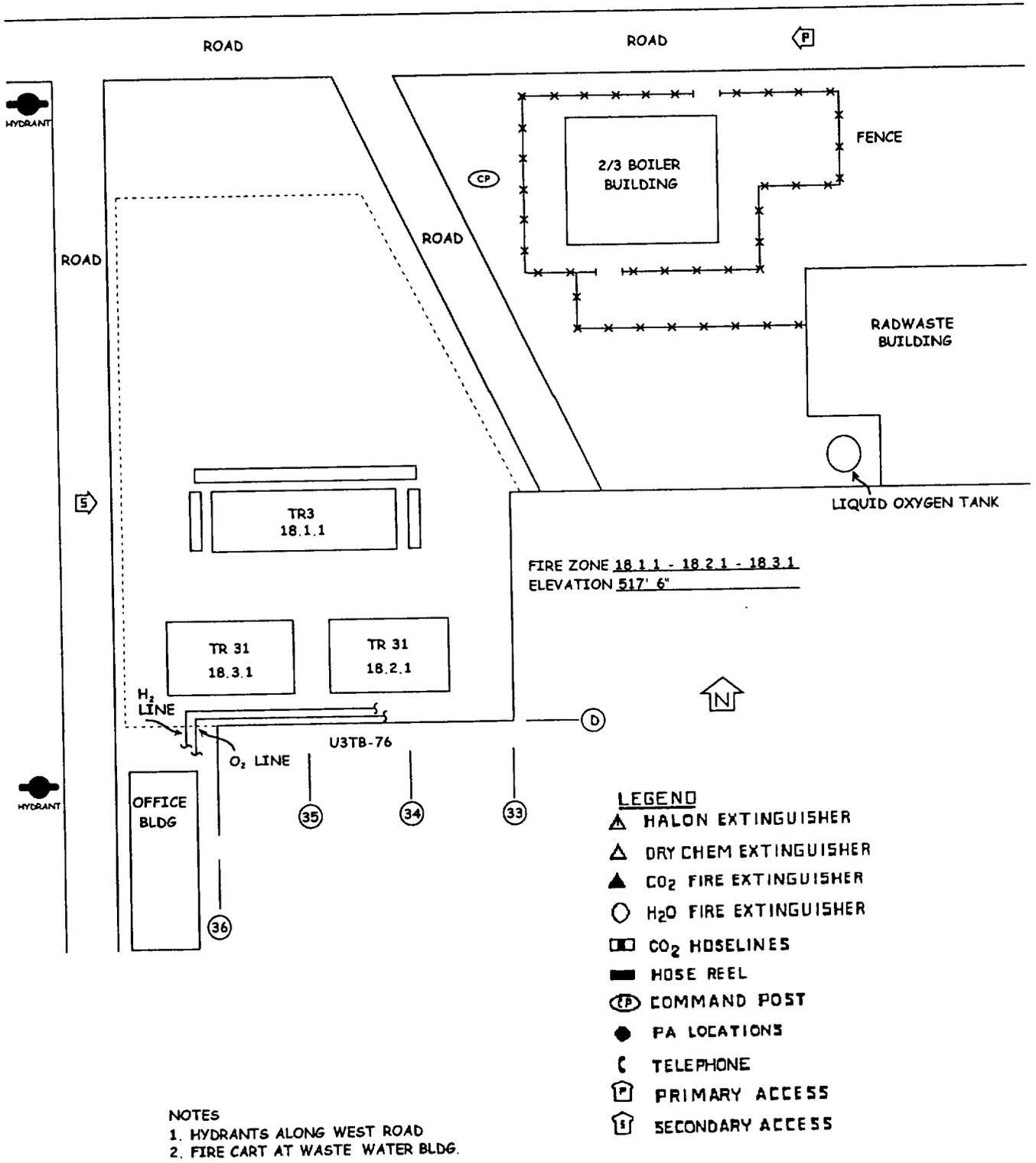
2/3 Boilerhouse
Overhead transmission lines
Other transformers

8.0 COMMUNICATIONS

Portable Radios

9.0 CONSTRUCTION

None - Units are located outside



COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS

FIRE PRE-PLAN

- 1.0 **Location:** Unit 3 Transformer Area
 North of U3 Turbine Building
 Outside Open Area Elevation 517 '6"
 Fire Zones 18.1.1 TR3
 18.2.1 TR3I
 18.3.1 TR32

2.0 **Access:**

2.1 **Primary:** North from 2/3 Radwaste around 2/3 Boilerhouse along access road.

2.2 **Secondary:** West access road along Unit 3 Turbine Building.

2/3 Boiler House is now fenced and locked under Radiation Protection Control

3.0 **Hazards:**3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Transformer	Transformer oil	B

3.2 **Electrical:** Unit 3 Main Transformer
 Unit 3 Auxiliary Transformer
 Unit 3 Reserve Auxiliary Transformer

3.3 **Hazardous Substances:** Hydrogen line on building wall
 Oxygen line on building wall

3.4 **Physical Hazards:** None

3.5 **Life Safety:** None

4.0 **Fire Protection Equipment:**

4.1 **Detection:** Thermal detectors initiate deluge system.

- 4.2 Automatic Suppression: Deluge System over transformers
- 4.3 Hose Reels: Hydrant across West road located West of Unit 3 Turbine Building
- 4.4 Portable Extinguishers: None

5.0 Guidelines for Fire Attack

- Establish command post near N.W. side of 2/3 Boilerhouse or South of wastewater building along West access road
- If suppression system has actuated- assistance may not be needed.
- Provide support to automatic suppression system.
- Self-contained breathing apparatus may be needed by personnel
- De-energize electrical equipment if possible
- Overhaul entire fire area; check for extension
- Position one person with a portable radio at sprinkler system control valve
- Provide a fire watch until fire suppression system is returned to service.

6.0 Ventilation: Outside open area

6.1 Fixed:

6.2 Manual:

- 7.0 Exposures: 2/3 Boilerhouse
Other transformers
Overhead transmission lines

8.0 Communications:

8.1 Portable radios: OK to use

8.2 Public Address: None

8.3 Telephone: None

9.0 Construction: N/A

9.1 Floor:

9.2 Wall:

9.3 Ceiling:

1.0 LOCATION

Unit 2 Transformer Area
Elevation 517'-6"
Fire Zones 18.1.2 TR2
18.2.2 TR21
18.3.2 TR22
18.3.2 TR12

2.0 ACCESS

Primary: East from 2/3 cribhouse
Secondary: West from Unit 1 turbine building

3.0 HAZARDS

Fire: Transformer Oil
Electrical: Transformers (4)
Other: None

4.0 FIRE PROTECTION EQUIPMENT

Detectors: Thermal
Suppression: Deluge system over transformers
Hydrants: Along north access road, F.H. #6 North of Transformers

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at East side of 2/3 cribhouse
- Check Suppression System
- S.C.B.A.
- Attack with 1-1/2" hose line to back up suppression system
- Search area for victims
- Overhaul. Provide a fire watch

6.0 VENTILATION

Fixed: None. Open area North of 2 turbine building

Manual: None

7.0 EXPOSURES

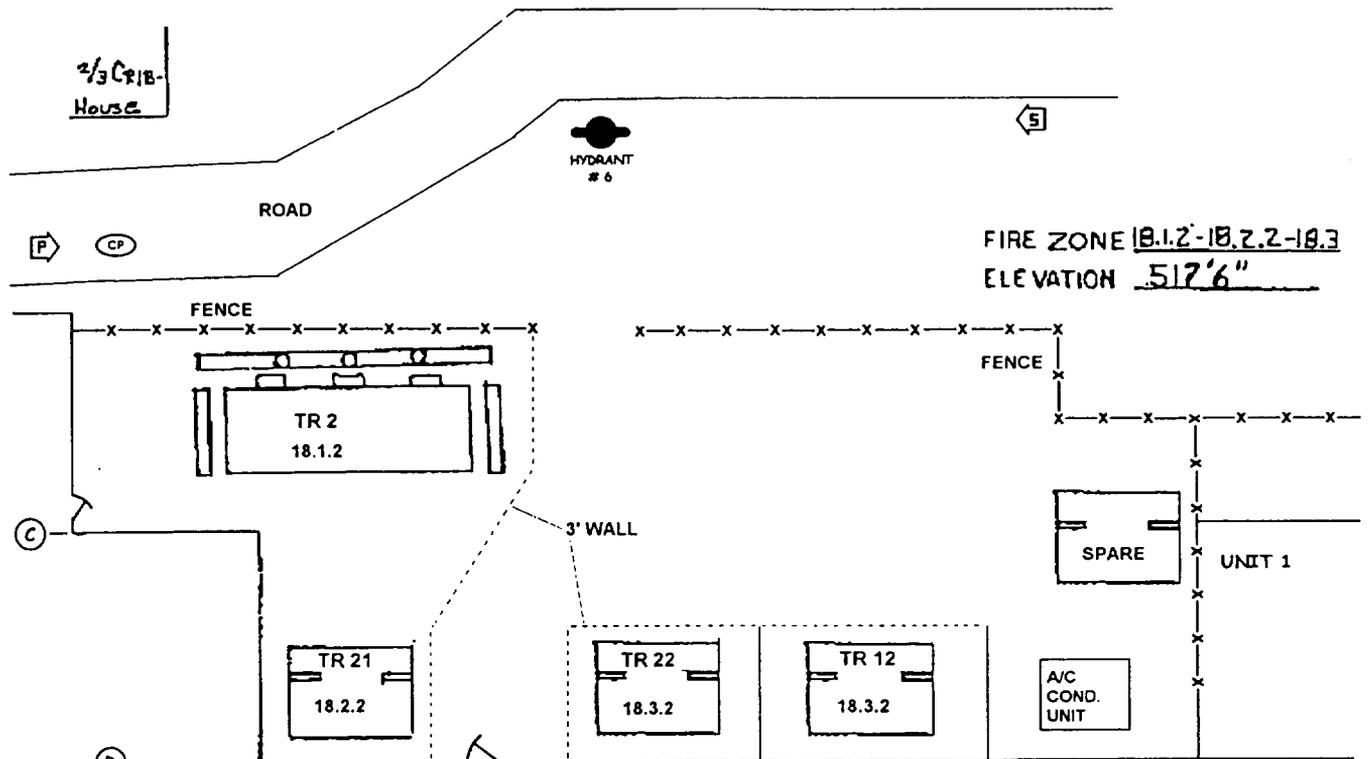
Other transformers
Overhead transmission lines

8.0 COMMUNICATIONS

Portable Radios

9.0 CONSTRUCTION

None - Units are located outside



- LEGEND**
- ▲ HALON EXTINGUISHER
 - △ DRY CHEM EXTINGUISHER
 - ▲ CO₂ FIRE EXTINGUISHER
 - H₂O FIRE EXTINGUISHER
 - ▣ CO₂ HOSE LINES
 - HOSE REEL
 - Ⓢ COMMAND POST
 - PA LOCATIONS
 - Ⓒ TELEPHONE
 - Ⓜ PRIMARY ACCESS
 - Ⓜ SECONDARY ACCESS

NOTES
 1. HYDRANTS ALONG NORTH ROAD

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS

FIRE PRE-PLAN

1.0 **Location:** Unit 2 Transformer Area
North of U2 Turbine Building
Outside Open Area Elevation 517'-6"
Fire Zones 18.1.2 TR2
18.2.2 TR21
18.3.2 TR22
18.3.2 TR12

2.0 **Access:**

- 2.1 **Primary:** East from 2/3 Cribhouse along north access road
2.2 **Secondary:** West from Unit 1 Turbine Building along north access road

3.0 **Hazards:**

3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Transformer	Transformer Oil	B

3.2 **Electrical:** Unit 2 Main Power Transformer
Unit 2 Auxiliary Transformer
Unit 3 Auxiliary Transformer
Unit 1 Auxiliary Transformer

3.3 **Hazardous Substances:** None

3.4 **Physical Hazards:** None

3.5 **Life Safety:** None

4.0 **Fire Protection Equipment:**

4.1 **Detection:** Thermal detectors initiate deluge system.

4.2 Automatic Suppression: Deluge System over transformers

4.3 Hose Reels: Hydrants along North access road, F.H. #6 North of Transformers

4.4 Portable Extinguishers: None

5.0 Guidelines for Fire Attack

- Establish command post near East side of 2/3 cribhouse.
- If suppression system has actuated, assistance may not be needed.
- Provide support to automatic suppression system.
- Self-contained breathing apparatus may be needed by personnel.
- De-energize electrical equipment if possible.
- Overhaul entire fire area; check for extension.
- Position one person with a portable radio at sprinkler system control valve.
- Provide a fire watch until fire suppression system is returned to service.

6.0 Ventilation: Outside open area

6.1 Fixed:

6.2 Manual:

7.0 Exposures: Other transformers
Overhead transmission lines

8.0 Communications:

8.1 Portable radios: OK to use

8.2 Public Address: None

8.3 Telephone: None

9.0 Construction: N/A

9.1 Floor:

9.2 Wall:

9.3 Ceiling:

COMMONWEALTH EDISON CO.
Dresden Units 2/3
Pre-plan Summary

Pre-plan 1/2/3 TR-H₂-142
Page 1 of 4
Rev. 4

1.0 LOCATION

Hydrogen Tank Farm
Elevation 517'
West of 2/3 cribhouse

2.0 ACCESS

Primary: West from 2/3 cribhouse
along north access road

Secondary: East from 2/3 radwaste
along north access road

3.0 HAZARDS

Fire: Hydrogen

Electrical: None

Other: None

4.0 FIRE PROTECTION EQUIPMENT

2 hydrants 1) Hydrant house
26 east of tank
farm, west of 2/3
cribhouse

2) Hydrant 25 south
of wastewater
building

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at 2/3 cribhouse
- S.C.B.A.
- Cool exposures until H₂ can be isolated - Do not extinguish fire
- Attack with 1-1/2" hose line after H₂ has been secured
- Search area for victims
- Overhaul. Provide a fire watch to assure no preflash/explosion.

6.0 VENTILATION

Fixed: None. Outside area

Manual: None

7.0 EXPOSURES

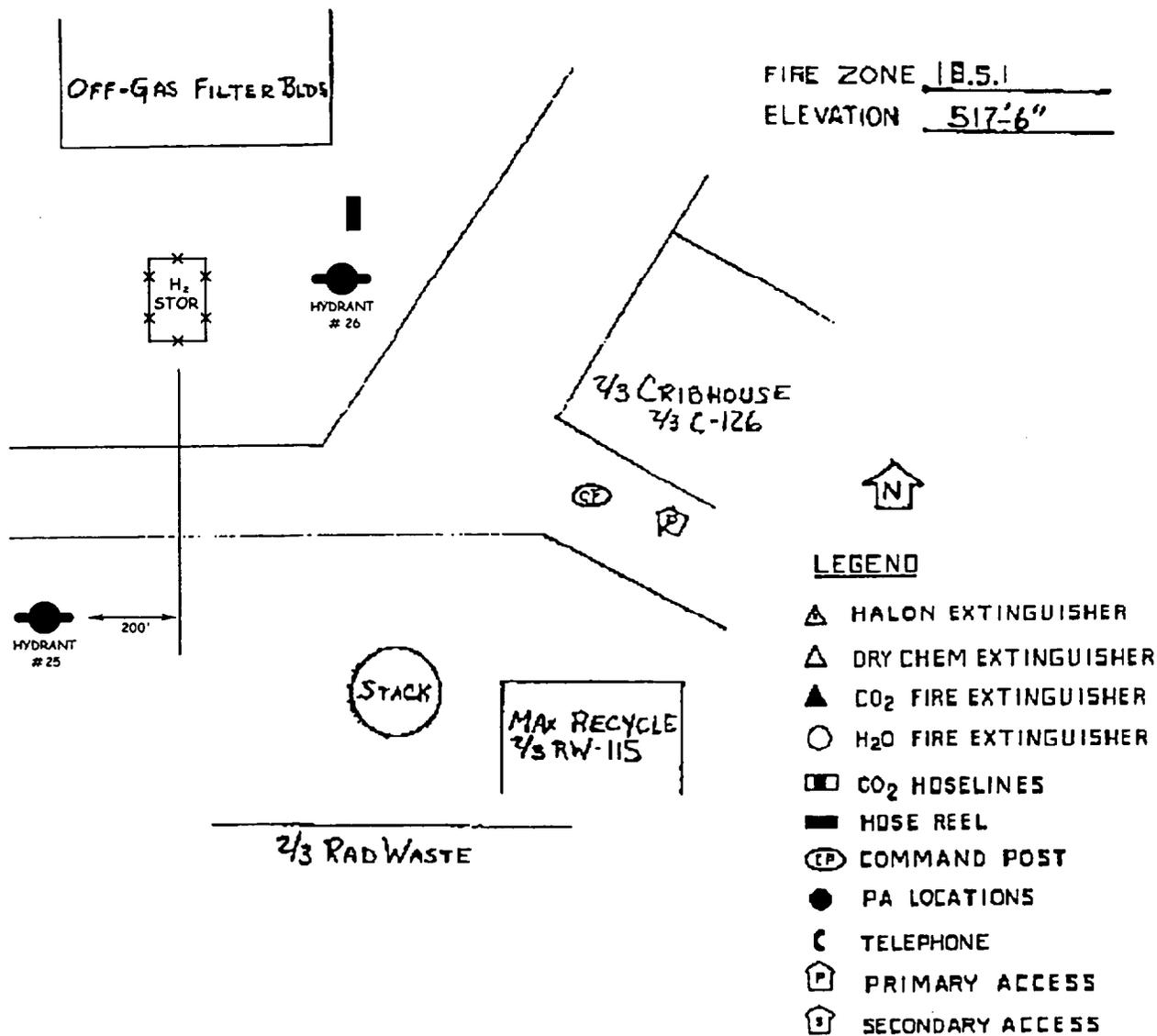
2/3 Off-Gas Building
2/3 Cribhouse

8.0 COMMUNICATIONS

Portable Radios

9.0 CONSTRUCTION

None



COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS

FIRE PRE-PLAN

1.0 **Location:** Hydrogen Tank Farm
Elevation 517'
West of 2/3 Cribhouse
South of 2/3 Off-Gas Building

2.0 **Access:**

2.1 **Primary:** West from 2/3 Cribhouse along North access road

2.2 **Secondary:** East from 2/3 Radwaste along North access road

3.0 **Hazards:**3.1 **Fire:**

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
H2 tanks	Hydrogen	B

3.2 **Electrical:** None

3.3 **Hazardous Substances:** Hydrogen

3.4 **Physical Hazards:** None

3.5 **Life Safety:** Hydrogen if leaking in large quantities could cause an explosion.

4.0 **Fire Protection Equipment:**

4.1 **Detection:** None

4.2 **Automatic
Suppression:** None

4.3 **Hose Reels:** Hydrants: Hydrant house 26 east of tank farm, west of 2/3 cribhouse;
Hydrant 25 south of waste water building.

4.4 **Portable
Extinguishers:** None

5.0 Guidelines for Fire Attack

- Establish command post near West side of 2/3 Crib House.
- If unit is on fire cool down exposures - do not extinguish fire until H₂ leak can be secured.
- Self-contained breathing apparatus may be needed by personnel.
- Search entire area for possible victims.
- Attack should be made with 1-1/2" hose lines once hydrogen is secured.
- Overhaul entire fire area; check for extension.
- Provide a fire watch until hydrogen system is repaired.

6.0 Ventilation: Outside area6.1 Fixed:6.2 Manual:**7.0 Exposures: 2/3 Crib House
2/3 Off-Gas Building****8.0 Communications:**8.1 Portable radios: OK to use8.2 Public Address: None8.3 Telephone: None**9.0 Construction: Outside area**9.1 Floor:9.2 Wall:9.3 Ceiling:

COMMONWEALTH EDISON CO.
 Dresden Units 2/3
 Pre-plan Summary

Pre-plan 1/2/3 TR-H₂-143
 Page 1 of 4
 Rev. 4

1.0 LOCATION

Hydrogen Trailer Area/Empty Radwaste
 Container Storage
 Elevation 517'
 North of Unit 1HPCI Building

2.0 ACCESS

Primary: East from Unit 1 Cribhouse
 along North access road

Secondary: North from Unit 1 HPCI
 Building area

3.0 HAZARDS

Fire: Hydrogen

Electrical: None

Other: Hydrogen Trailer Connections

4.0 FIRE PROTECTION EQUIPMENT

None

5.0 GUIDELINES FOR FIRE ATTACK

- Command Post at Unit 1 HPCI Building
- S.C.B.A.
- Cool exposures and trailers until H₂ can be isolated
- Search area for victims
- Attack with 1-1/2" hose line after H₂ has been secured
- Overhaul. Provide a fire watch to assure no reflash/explosion

6.0 VENTILATION

Fixed: Outside area

Manual: None

7.0 EXPOSURES

None

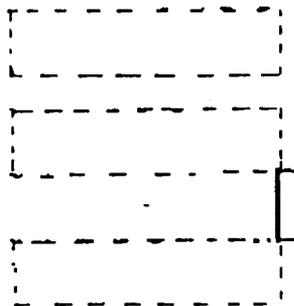
8.0 COMMUNICATIONS

Portable Radios

9.0 CONSTRUCTION

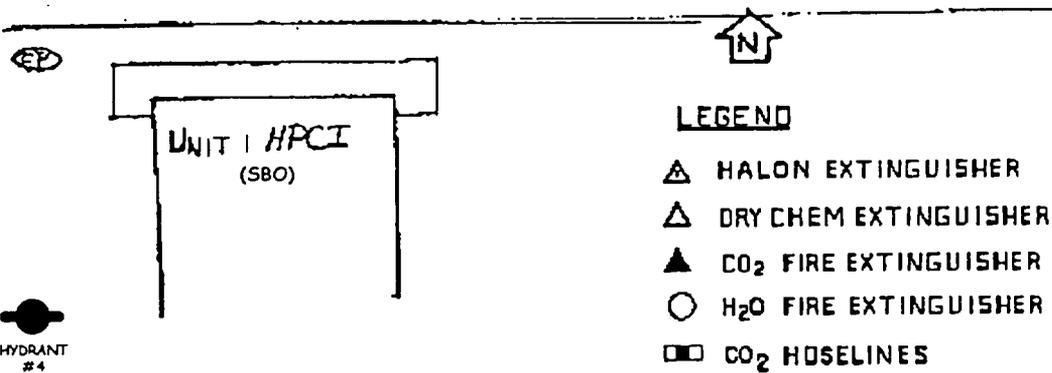
None

H₂ TRAILER AREA



SEWAGE EJECT STA. 

FIRE ZONE B.5.2
ELEVATION 517'6"



LEGEND

-  HALON EXTINGUISHER
-  DRY CHEM EXTINGUISHER
-  CO₂ FIRE EXTINGUISHER
-  H₂O FIRE EXTINGUISHER
-  CO₂ HOSELINES
-  HOSE REEL
-  COMMAND POST
-  PA LOCATIONS
-  TELEPHONE
-  PRIMARY ACCESS
-  SECONDARY ACCESS

COMMONWEALTH EDISON CO.

DRESDEN NUCLEAR UNITS

FIRE PRE-PLAN

1.0 Location: Hydrogen Trailer Area/Empty Radwaste Container Storage
Elevation 517'
North of Unit 1 HPCI Building

2.0 Access:

2.1 Primary: East from Unit 1 Cribhouse along north access road

2.2 Secondary: North from Unit 1 HPCI Building area

3.0 Hazards:3.1 Fire:

<u>Hazard</u>	<u>Material</u>	<u>Class</u>
Hydrogen tubes/ Trailer	Hydrogen	B

3.2 Electrical: None

3.3 Hazardous Substances: Hydrogen

3.4 Physical Hazards: None

3.5 Life Safety: Hydrogen if leaking in large quantities could cause an explosion.

4.0 Fire Protection Equipment:

4.1 Detection: None

4.2 Automatic
Suppression: None

4.3 Hose Reels: None

4.4 Portable
Extinguishers: None

5.0 Guidelines for Fire Attack

- Establish command post near Unit 1 HPCI Building.
- If unit is on fire cool down area - Do not extinguish fire until H₂ leak can be secured.
- Self-contained breathing equipment may be needed by personnel.
- Attack should be made with 1-1/2" hose lines once H₂ is secured.
- Search entire area for possible victims.
- Overhaul entire fire area; check for extension.
- Provide a fire watch until hydrogen system is repaired.

6.0 Ventilation: Outside Area

6.1 Fixed: N/A

6.2 Manual: N/A

7.0 Exposures: None**8.0 Communications:**

8.1 Portable radios: OK to use

8.2 Public Address: None

8.3 Telephone: None

9.0 Construction: Outside Area

9.1 Floor: N/A

9.2 Wall: N/A

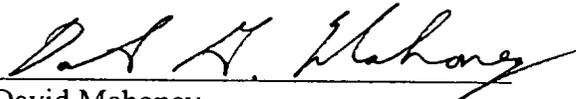
9.3 Ceiling: N/A

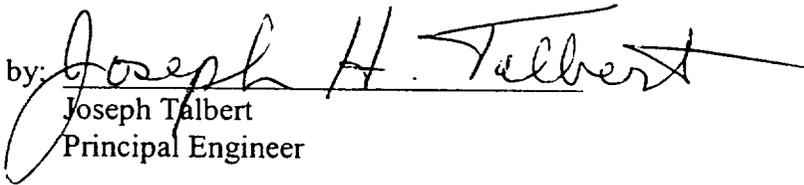
COMMONWEALTH EDISON COMPANY
DRESDEN NUCLEAR STATION
UNITS 2 & 3 FIRE PRE-PLANS

NTSC Report No. 99-4055

Revision - 0

Date: 12-13-99

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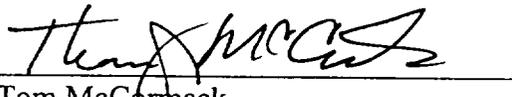
Approved by: 
Tom McCormack
Principal Engineer

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COMMONWEALTH EDISON COMPANY DRESDEN NUCLEAR STATION UNITS 2 & 3 FIRE PRE-PLANS UPDATE NTSC REPORT NO. 99-4055, REV. 0

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**COMMONWEALTH EDISON COMPANY
DRESDEN NUCLEAR STATION
UNITS 2 & 3 FIRE PRE-PLANS UPDATE
NTSC REPORT NO. 99-4055, REV. 0**

1.0 PURPOSE

The purpose of this report is to update the existing Dresden Nuclear Station, Units 2 & 3 Fire Pre-Plans to incorporate plant changes that have occurred since the last update. In addition, to address pre-plan issues discussed in Fire Protection Self-Assessment Report dated 12/15/98 (Design Input 5), the following plant issues were addressed in the fire pre-plans: hose stations provided with non-electrically rated nozzles; hose stations with fire hoses that do not provide coverage to certain plant areas; and locations where the brigade may open a fire door to route a hose through a fire wall, potentially exposing required Appendix R safe shutdown components to the effects of fire and/or firefighting activities.

2.0 METHODOLOGY

The following steps were performed to update the Dresden Nuclear Station, Units 2 & 3 Fire Pre-Plans, Revision 3:

1. A walkdown of appropriate areas of the plant was performed in accordance with NTSC procedure 99-4055WD, Rev. 0 (Design Input 1) to identify plant changes that have occurred since the last update.
2. An analysis was done to identify the locations where the Fire Pre-Plans instruct the brigade to route a hose through fire doors in fire walls that isolate required Appendix R safe shutdown components.

The "F" drawings (Design Input 2) were reviewed to determine the location of each fire zone and its adjacent fire zones. The elevations of each fire zone and its adjacent fire zones were determined from the "F" drawings (Design Input 2). The coordinates were determined for each Fire Brigade Primary and Secondary Access Point based on the column lines shown in the "F" drawings (Design Input 2). From the Safe Shutdown Report (Design Input 3), the required safe shutdown components associated with each fire zone were identified, as were the safe shutdown components in adjacent zones. The location of the required safe shutdown components were identified using the "M" drawings (Design Input 4). Required Safe Shutdown Components not shown on the "M" drawings were verified by the walkdowns by NTSC (Design Input 1) or by the Dresden Fire Protection System Engineer by telephone.

The Fire Pre-Plans were then revised by adding a Special Note to indicate to the Fire Brigade those Primary and Secondary Access points at which required Safe Shutdown components were located in the adjacent Fire Pre-Plan area within 20 feet of the Access Point through a fire door in a fire wall. Where Safe Shutdown Components were located within 20 feet of the access point, but there was no wall or door separating the Fire Pre-Plans, no Special Note was added. In addition, where access to a Fire Pre-Plan area was made from a lower level, no Special Note was added because fire effects would go upward, away from the safe shutdown component which may have been near the Access Point.

3. The Fire Protection Self-Assessment Report (Design Input 5) and the NFPA 14 Code Compliance Report (Design Input 6) were used to identify non-electrically rated hose nozzles and areas where hose stream coverage is lacking. Fire-fighting instructions were developed to address these conditions. The Fire Pre-Plans were enhanced to show where fire hoses located on reels within the plant that cannot reach certain plant areas and provide instructions to ensure the brigade members install a sufficient amount of hose from the portable fire brigade equipment cart. The Fire Pre-Plans were also enhanced to show the location of the non-approved nozzles and to list the safety precautions associated with applying a steady stream of water to electrical equipment.
4. Existing text was updated to reflect the mark-up information. Information on the summary sheet, pre-plan drawings and detailed instructions were verified to be consistent, where changes were identified in the walkdown information and/or safe shutdown component analysis.
5. Existing bitmap drawings were edited to reflect the walkdown information.
6. Data files for each fire pre-plan, including the bitmap drawings and text, were then developed.

3.0 ASSUMPTIONS

None

4.0 DESIGN INPUTS

1. NTSC Procedure 99-4055WD, Rev. 0., "Dresden Units 2 & 3 Fire Pre-Plans Walkdown Methodology and Checklist."

2. F Drawings for Dresden Nuclear Station: F-1, Rev. D; F-2-1, Rev. H; F-3-1, Rev. H; F-4-1, Rev. F; F-5-1, Rev. G; F-6-1, Rev. F; F-7-1, Rev. C; F-8-1, Rev. J; F-8-1, Sheet 2, Rev. A; F-9-1, Rev. C; F-10-1, Rev. F and DCP 9900176, Rev. 0; F-11-1, Rev. F and DCP 9900179, Rev. 0; F-12-1, Rev. D; F-13-1, Rev. F; F-14-1, Rev. F; F-15-1, Rev. B; F-16-1, Rev. D; F-17-1, Rev. D; F-18-1, Rev. D; F-19-1, Rev. D and DCP 9900178, Rev. 0; F-20-1, Rev. E; F-21-1, Rev. C; F-22-1, Rev. B; and F-23-1, Rev. B.
3. Dresden 2 & 3 Safe Shut Down Report Amendment 12, March 1999
4. M Drawings for Dresden Nuclear Station: M-2, Rev. H; M-2A, No Rev. Number given; M-3, Rev. K; M-4, Rev. U; M-5, Rev. K; M-6, Rev. H; and M-10E, Rev. C.
5. Fire Protection Self-Assessment Report 237-251-98-03100, dated 12/15/98
6. An Evaluation of Standard for the Installation of Standpipe and Hose Systems (NFPA #14) at the Dresden Nuclear Power Station, Units 2 & 3, for Commonwealth Edison Company, Rev.1, dated 5/30/85.
7. NTSC Report 94-135.001, Unit 1 Fire Pre-Plans, Rev. 0, dated 02/22/96

5.0 RESULTS

The Dresden Nuclear Station, Units 2 & 3 Fire Pre-Plans were updated to Revision 4. To address the fire pre-plan issues discussed in Fire Protection Self-Assessment Report dated 12/15/98, Special Notes were incorporated into the following fire pre-plans to indicate:

- Hose stations provided with non-electrically rated nozzles (2/3 RB-32, U2TB-48 and U2TB-49);
- Hose stations with fire hoses that do not provide coverage to certain plant areas (U2RB-5, U3RB-25, U2TB-50, U3TB-78, 3CT-100, 3CT-101, 2/3C-124, 2/3C-125, 2/3OG-131, 2/3OG-132 and 1C-137); and
- Locations where the brigade may open a fire door in a fire wall to route a hose potentially exposing required Appendix R safe shutdown components to fire (U2RB-5, U2RB-6, U3RB-24, U3RB-28, and U2TB-43).

In addition, the fire pre-plans (U1TB-145, U1TB-146 and U1TB-147) for the West Auxiliary Bay and Main Turbine Floor of the Unit 1 Turbine Building were removed from the Units 2 & 3 Fire Pre-Plans. Duplicate pre-plans (U1TB-9, U1TB-32 and U1TB-33) for these areas of the Unit 1 Turbine Building are located in the Dresden Nuclear Station, Unit 1 Fire Pre-Plans (Design Input 7). The pre-plans listed in the following table were revised to reflect conditions observed during the walkdown associated with this project:

COMMONWEALTH EDISON COMPANY
Dresden Nuclear Station
Units 2 & 3 Fire Pre-Plans

Pre-Plan Number	Fire Zone	Unit No.	Description	Elev.	Rev.
			NTSC Report No. 99-4055		4
U2RB-1	1.1.2.1	2	Torus	476	4
U2RB-2	11.2.1	2	Southwest Corner Room	476	4
U2RB-3	11.2.2	2	Southeast Corner Room	476	4
U2RB-4	11.2.3	2	HPCI Pump Room	476	4
U2RB-5	1.1.2.2	2	Ground Floor	517	4
U2RB-6	1.3.2	2	Shutdown Cooling Pump Room	517	4
U2RB-7	1.1.2.3	2	Secondary Containment	545	4
U2RB-8	1.1.2.3	2	Non-Reg. Heat Exchanger	545	4
U2RB-9	1.1.2.3	2	Shutdown Heat Exchanger	545	4
U2RB-10	1.1.2.4	2	Secondary Containment	570	4
U2RB-11	1.1.2.5.D	2	Stand-by Liquid Control Area	589	4
U2RB-12	1.1.2.5.A	2	Isolation Condenser Area	589	4
U3RB-19	1.1.1.1	3	Torus	476	4
U3RB-20	11.1.1	3	Southwest Corner Room	476	4
U3RB-21	11.1.2	3	Southeast Corner Room	476	4
U3RB-22	11.1.3	3	HPCI Pump Room	476	4
U3RB-23	1.1.1.2	3	Ground Floor	517	4
U3RB-24	1.3.1	3	Shutdown Cooling Pump Room	517	4
U3RB-25	1.4.1	3	Tip Drive Room	517	4
U3RB-26	1.1.1.3	3	Secondary Containment	545	4
U3RB-27	1.1.1.3	3	Non-Reg. Heat Exchanger	545	4
U3RB-28	1.1.1.3	3	Shutdown Heat Exchanger	545	4
U3RB-29	1.1.1.4	3	Secondary Containment	570	4
U3RB-30	1.1.1.5.D	3	Standby Liquid Control Area	589	4
U3RB-31	1.1.1.5.A	3	Isolation Condenser Area	589	4
U2/3RB-32	1.1.1.2 1.1.2.6	2/3	Refueling Floor	613	4
U2TB-36	8.2.1.A	2	Condensate Pumps	469	4

COMMONWEALTH EDISON COMPANY
Dresden Nuclear Station
Units 2 & 3 Fire Pre-Plans

Pre-Plan Number	Fire Zone	Unit No.	Description	Elev.	Rev.
U2TB-37	8.2.2.A	2	CCSW Pumps	495	4
U2TB-38	8.2.5.B	2	Low Pressure Heater Bays	517	4
U2TB-39	8.2.5.C	2	Oil Storage	517	4
U2TB-40	8.1	2	Clean and Dirty Oil Room	517	4
U2TB-41	8.2.5.A	2	H.P. Heaters/Steam Lines	517	4
U2TB-42	8.2.5.A	2	Reactor Feed Pumps	517	4
U2TB-43	9.0.A	2	Diesel Generator	517	4
U2TB-44	8.2.5.A	2	Cond. Transfer Pumps/Hallway	517	4
U2TB-45	8.2.5.A	2	Trackway Area	517	4
U2TB-46	6.2	2/3	Computer Room and Auxiliary Electrical Room	517	4
U2TB-47	8.2.5.A	2	Switchgear and MCC	517	4
U2TB-48	8.2.6.A	2	RFP Vent, H ₂ Seal Area	538	4
U2TB-49	2.0	2	Control Room	534	4
U2TB-50	8.2.6.B	2	Low Pressure Heater Bays	538	4
U2TB-51	8.2.6.A	2	Switchgear Area	534	4
U2TB-52	8.2.7	2	T.B. Ventilation Area	549	4
U2TB-53	7.0.A.1-.3/ 8.2.7	2	Battery Rooms	549	4
U2TB-54	8.2.8.D/14.2.A	2	Fan Floor	549	4
U2TB-55	14.2.B/8.2.8.D	2	Off-Gas Recombiner	571	4
U2TB-56	14.2.C	2	Off-Gas Recomb./H ₂ Analyzer	590	4
U2TB-57	8.2.8.A	2	Main Turbine Floor	561	4
U2TB-58	8.2.8.A	2	Turbine Area	561	4
U3TB-68	8.2.1.B	3	Condensate Pumps	469	4
U3TB-69	8.2.2.B	3	CCSW Pumps	495	4
U3TB-70	8.2.5.D	3	Low Pressure Heater Bays	517	4
U3TB-71	8.2.5.E	3	H.P. Heaters/Steam Line	517	4
U2TB-72	8.2.5.E	3	Reactor Feed Pump	517	4
U3TB-73	9.0.B	3	Diesel Generator	517	4

Pre-Plan Number	Fire Zone	Unit No.	Description	Elev.	Rev.
U3TB-74	8.2.5.E	3	Cond. Transfer Pumps/Hallway	517	4
U3TB-75	8.2.5.E	3	Trackway Area	517	4
U3TB-76	8.2.5.E	3	Switchgear Area	517	4
U3TB-77	8.2.6.E	3	RFW SWGR H ₂ Seal	538	4
U3TB-78	8.2.6.D	3	Low Pressure Heater Bays	538	4
U3TB-79	6.1	3	U-3 Battery Charger Room	538	4
U3TB-80	7.0.B	3	250V Battery Room	551	4
U3TB-81	8.2.8.D/14.3.A	3	Fan Floor	549	4
U3TB-82	14.3.B/8.2.8.D	3	Off-Gas Recombiner	571	4
U3TB-83	14.3.C/8.2.8.D	3	Off-Gas Recomb./H ₂ Analyzer	590	4
U3TB-84	8.2.8.A	3	Main Turbine Floor	561	4
U3TB-85	8.2.8.A	3	Turbine Area	561	4
2/3TB-92	8.2.5.C	2/3	EHC Reservoir Area	517	4
2/3TB-93	8.2.5.C	2/3	Cond. Demin. Area	517	4
2/3TB-94	8.2.6.C	2/3	Lube Oil Reservoir Area	534	4
2/3TB-95	8.2.6.C	2/3	Heat Exchanger Area	534	4
2/3TB-96	8.2.8.A	2/3	MG Sets	561	4
2/3TB-97	8.2.8.B/8.2.8C	2/3	Rx. Bldg. Ventilation Equip.	581	4
U3CT-100	8.2.4	3	Cable Tunnel East	502	4
U3CT-101	8.2.4	3	Cable Tunnel West	502	4
2/3DG-105	9.0.C	2/3	Swing Diesel Generator Room	517	4
2/3RW-108	14.1	2/3	Sludge/Spent Resin Tank	488	4
2/3RW-109	14.1	2/3	Barrel Storage	507	4
2/3RW-110	14.1	2/3	Barrel Storage	517	4
2/3RW-111	14.1	2/3	Area "A" – Vent Fan Room Area "B" – Cement Silo/Hopper	529/544	4
2/3RW-112	14.5	2/3	Control Room/Truck Lock	517	4
2/3RW-113	14.5	2/3	Solidification Building	529	4
2/3RW-114	14.6	2/3	Max Recycle	529	4

COMMONWEALTH EDISON COMPANY
 Dresden Nuclear Station
 Units 2 & 3 Fire Pre-Plans

Pre-Plan Number	Fire Zone	Unit No.	Description	Elev.	Rev.
2/3RW-115	14.6	2/3	Max Recycle	540	4
2/3RW-116	14.5	2/3	Stock Vent Room	551	4
2/3RW-117	14.6	2/3	Max Recycle	558	4
2/3RW-118	14.6	2/3	Max Recycle	579	4
2/3C-124	11.3	2/3	Circulating Water Pumps Room	490	4
2/3C-125	11.3	2/3	Service Water Pumps Room	509	4
2/3C-126	11.3	2/3	Ground Floor	517	4
2/3OG-131	14.4	2/3	Equipment	476	4
2/3OG-132	14.4	2/3	Agitator Area	497	4
2/3OG-133	14.4	2/3	Ventilation Equipment Room	517	4
UIC-137		1	Crib House	517	4
TRH ₂ -140	18.1.1, 18.2.1, 18.3.1	3	Unit 3 Transformer Area	517	4
TRH ₂ -141	18.1.2, 18.2.2, 18.3.2	2	Unit 2 Transformer Area	517	4
TRH ₂ -142	18.5.1	1/2/3	Hydrogen Tank Farm	517	4
TRH ₂ -143	18.5.2	1/2/3	Hydrogen Trailer Area/Empty Radwaste Container Storage	517	4

6.0 SUMMARY AND CONCLUSIONS

This revision resolved the following Fire Protection Self-Assessment (Design Input 5) issues:

A.6.(b).1.(c) Enhance Fire Pre-Plans to show areas where fire hoses do not reach;

B.3.(a).5.(b) Enhance Fire Pre-Plans to identify hose stations equipped with non-approved nozzles; and,

B.5.(b).1.(a) Enhance Fire Pre-Plans to include impact on required safe shutdown components when routing hose through a fire door.

The revision also updated the Fire Pre-Plans to reflect the conditions observed during the walkdowns associated with this project.

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 - A Appendix A to Branch Technical Position APCSB 9.5.1
 - B Supplementary Guidance (Functional Responsibilities)
 - C Appendix R to 10CFR50
 - D 10CFR50.48
 - E Generic Letters (GL)
 - 1 GL 81-12 – Fire Protection Rule
 - 2 GL 81-12 – Clarification
 - 3 GL 82-21 – Technical Specification for Fire Protection Audits
 - 4 GL 83-33 – NRC Positions on Certain Requirements of Appendix R to 10CFR50
 - 5 GL 85-01 – Fire Protection Policy Steering Committee Report
 - 6 GL 86-10 – Implementation of Fire Protection Requirements
 - 7 GL 88-12 – Removal of Fire Protection Requirements from Technical Specifications
 - 8 GL 92-08 – Thermo-Lag 330-1 Fire Barriers
 - 9 GL 92-08 – Supplement – Fire Endurance Test Criteria
 - 10 GL 93-06 – Research Results on Generic Safety Issue 106, “Piping and the Use of Highly Combustible Gases in Vital Areas”
 - F Information Notices (IN)
 - 1 IN 84-09 – Lessons Learned from NRC Inspections
 - 2 IN 84-16 – Failure of Automatic Sprinkler System Valves to Operate
 - 3 IN 84-92 – Cracking of Flywheels on Cummins Fire Pump Diesel Engines
 - 4 IN 85-09 – Isolation Transfer Switches
 - 5 IN 85-85 – Systems Information Event Resulting in Reactor System Safety Relief Valve Opening Following a Fire-Protection Deluge System Malfunction
 - 6 IN 86-17 – Update of Failure of Automatic Sprinkler System Valves to Operate
 - 7 IN 86-35 – Fire in Compressible Material at Dresden Unit 3

* To review regulatory documents not listed here, contact Dresden Regulatory Assurance for assistance.

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- 9 IN 87-50 – Potential LOCA at High- and Low-Pressure Interfaces from Fire Damage
- 10 IN 88-04 – Inadequate Qualification and Documentation of Fire Barrier Penetration Seals
- 11 IN 88-04, Supplement 1 – Inadequate Qualification and Documentation of Fire Barrier Penetration Seals
- 12 IN 88-05 – Fire in Annunciator Control Cabinets
- 13 IN 88-20 – Individual Plant Examination for Severe Accident Vulnerabilities
- 14 IN 88-56 – Potential Problems with Silicone Foam Fire Barrier Penetration Seals
- 15 IN 88-60 – Inadequate Design and Installation of Watertight Penetration Seals
- 16 IN 88-64 – Reporting Fires in Nuclear Process Systems at Nuclear Power Plants
- 17 IN 89-04 – Potential Problems from the Use of Space Heaters
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- 27 IN 91-79 – Deficiencies in the Procedures for Installing Thermo-Lag Fire Barrier Materials
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- 32 IN 92-55 – Current Fire Endurance Test Results for Thermo-Lag Fire Barrier Material
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- 34 IN 93-40 – Fire Endurance Test Results for Thermal Ceramics FP-60 Fire Barrier Material
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- 36 IN 93-71 – Fire at Chernobyl Unit 2
- 37 IN 94-12 – Insights Gained from Resolving Generic Issue 57: Effects of Fire Protection System Actuation on Safety-Related Equipment
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- 40 IN 95-33 – Switchgear Fire and Partial Loss of Power at Waterford Generating Station
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IN 95-52, Supplement 1 – Fire Endurance Test Results for Electrical Raceway Fire Barrier Systems Constructed from 3M Company Interam Fire Barrier Materials
- 42 IN 96-23 – Fires in Emergency Diesel Generator Exciters During Operation Following Undetected Fuse Blowing
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- 44 IN 96-34 – Hydrogen Gas Ignition During Closure Welding of a VSC-24 Multi-Assembly Sealed Basket
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- III List of Fire Protection Drawings
F-Drawings
- IV Safe Shutdown Report Preparation Summary and Division of Responsibility, January 27, 1987
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2	IN 84-16 – Failure of Automatic Sprinkler System Valves to Operate
3	IN 84-92 – Cracking of Flywheels on Cummins Fire Pump Diesel Engines
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30	IN 92-28 – Inadequate Fire Suppression System Testing
31	IN 92-46 – Thermo-Lag Fire Barrier Material Special Review Team Final Report Findings, Current Fire Endurance Tests, and Ampacity Calculation Errors
32	IN 92-55 – Current Fire Endurance Test Results for Thermo-Lag Fire Barrier Material
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<u>Tab</u>	<u>Title</u>
45	IN 97-01- Improper Electrical Grounding Results in Simultaneous Fires in the Control Room and the Safe-Shutdown Equipment Room
46	IN 97-59 – Fire Endurance Test Results of Versawrap Fire Barriers
47	IN 97-72 – Potential for Failure of the Omega Series Sprinkler Heads
48	IN 97-73 – Fire Hazard in the Use of a Leak Sealant
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Implementation of Fire Protection Requirements
(Generic Letter 86-10)

<u>Page</u>	<u>Title</u>
I.5.G-1	Generic Letter 86-10 dated April 24, 1986.
I.5.G-57	July 7, 1986 CECo memo discussing the Dresden review of Generic Letter 86-10.
I.5.G-60	August 6, 1986 CECo memo discussing compliance with Generic Letter 86-10 for all CECo plants.
I.5.G.71	January 6, 1987 CECo memo discussing Dresden and Quad Cities compliance with Generic Letter 86-10, and the issuance of a new Appendix R Safety Evaluation Report for each station.
I.5.G.72	December 23, 1986 S&L letter transmitting revised responses to questions in Generic Letter 86-10 for both Dresden and Quad Cities.
I.5.G.109	Generic Letter 86-10 Fire Boundary Documentation Required to Demonstrate Compliance with 10 CFR 50 Appendix R

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Inadequate Qualification and Documentation of Fire Barrier Penetration Seals
(Information Notice 88-04)

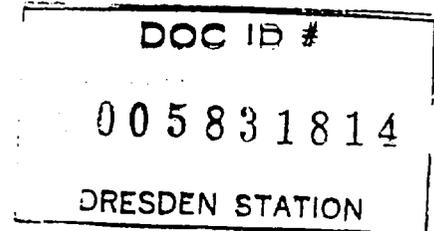
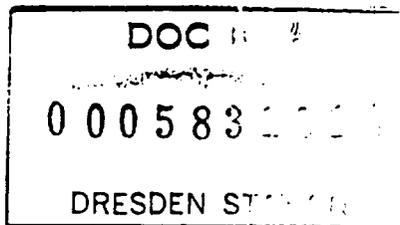
<u>Page</u>	<u>Title</u>
I.5.M-1	Information Notice 88-04 dated February 5, 1988
I.5.M-7	Information Notice 88-04, Supplement 1 dated August 9, 1988
I.5.M-10	May 25, 1988 CECo letter from B. Barth to H. E. Bliss, Inadequate Qualification and Documentation of Fire Barrier Penetration Seals
I.5.M-14	November 4, 1988 CECo letter from M. A. Poland to H. E. Bliss, Inadequate Qualification and Documentation of Fire Barrier Penetration Seals

DRESDEN 2 & 3

FIRE PROTECTION PROGRAM DOCUMENTATION PACKAGE

Information Notice 88-05, Fire in Annunciator Control Cabinets

<u>Page</u>	<u>Item</u>
I.5.N-1	Information Notice No. 88-05, Revision 0, dated February 12, 1988.
I.5.N-3	May 24, 1988, CECo letter from K.W. Sykes (Reg. Assurance) to H. E. Bliss (Licensing Manager) in response to IN. 88-05.

DRESDEN UNIT 1 ENGINEERING

In Reply, refer to Doc. ID Letter No:

Date: December 14, 1998

To: Nathan Leech
Unit 1 Decommissioning Plant Manager
Dresden Station

Subject: Fire Protection Regulatory Requirements and Conformance Review
Dresden Unit 1

References: 1. NTS Item No. 10-225-98-09701

Summary

This letter provides documentation of the review of regulatory requirements associated with nuclear plant Fire Protection Programs and serves to document Dresden Unit 1's conformance with those requirements. The recommendation to capture the requirements for maintenance and updating of the Dresden Unit 1 Fire Hazards Analysis Report are made as well as a recommendation to provide Unit 2/3 Engineering with a draft update for the Unit 2/3 Fire Protection Reports, Chapter 6.0 of Volume 1.

Background

In a meeting between Unit 1 Engineering and Unit 2/3 Engineering earlier this year, a concern was raised regarding the documentation available to demonstrate conformance of Dresden Unit 1's Fire Protection Program with regulatory requirements. In response to this concern, Unit 1 Engineering scheduled a review of regulatory requirements and history associated with Dresden Unit 1. This activity was tracked by the referenced NTS Item.

Details

The attachment to this letter documents the Dresden Unit 1 Fire Protection Regulatory Conformance Review.

Conclusions/Recommendations

The Dresden Unit 1 Fire Protection Program is encompassed by the Dresden Site Fire Protection Program. Review of the "operating history" since shutdown of the unit (1978) and the present concludes conformance with regulatory requirements has been maintained. To date, regulations have not clearly required a detailed Fire Hazards Analysis for a decommissioned plant be performed and updated with a specified periodicity. Draft Regulatory Guide DG-1069 suggests that a Fire Hazards Analysis be maintained for decommissioned plants. The 1996 Update of Dresden Unit 1's Fire Hazards Analysis which is maintained as an engineering report provides documentation of compliance

with radiation release requirements of 10 CFR §50.48.(f). It is recommended that a Dresden Decommissioning Procedure be developed for capturing the requirements for maintenance and updating of the Dresden Unit 1 Fire Hazards Analysis Report (NTS 10-225-98-09702). In addition, to assure conformance between the Unit 2/3 Fire Protection Reports and the Unit 1 Fire Hazards Analysis Report, it is recommended that a draft update of the Unit 2/3 Fire Protection Report, Chapter 6 of Volume 1 be provide to Unit 2/3 Engineering to support updating of the Unit 2/3 Fire Protection Reports (NTS 10-225-98-09703).

This Doc. ID Letter completes all actions required for NTS Item No. 10-225-98-09701.

Prepared by: Gaines E. Bruce Date: 12/14/98
 Gaines E. Bruce
 Dresden Unit 1 Plant Engineering

Reviewed by: James F. Limes Date: 12/14/98
 James F. Limes
 Dresden Unit 1 Plant Engineering Lead

Approved by: Bernard J. Christel Date: 12/14/98
 Bernard J. Christel
 Dresden Unit 1 Decommissioning Engineering Manager

Attachment

cc:

Kenneth A. Ainger (NGB Licensing.)
 Peter G. Chabot
 Demetrius L. Willis
 Russel R. Peak
 Jack P. Steiner
 Michael M. Dillon

*Attachment 1
Dresden Unit 1 Fire Protection Regulatory Conformance Review*

Purpose:

The purpose of this document is to address NTS Item Number 10-225-98-09701. This NTS Item was to perform a Study/Evaluation/Review of Fire Protection Requirements applicable to Unit 1 SAFSTOR Operation and Dormancy and document the degree of conformance to requirements as it relates to the discussion in the DSAR, Unit 1 Technical Specifications, and the Dresden Unit 2/3 SAR.

Background:

Dresden Unit 1 was the first nuclear plant built by private industry. Commonwealth Edison and a consortium of six other electric utilities built it as a cooperative effort. General Electric Company designed the plant and Bechtel Corporation was the engineer-constructor. The construction permit for the plant was issued May 12, 1957 and the Operating License was issued November 16, 1959.

Occupying its unique place in the infancy of the commercial nuclear power industry, the designers of Dresden Unit 1 were devoted to assuring that the Dresden Nuclear Power Station would involve no greater danger, accident probability or magnitude, than would be associated with the operation of a fossil-fueled power plant. As such, efforts were extended to assure that the station would be a good neighbor and employer, and carry out its operations in this new and promising field without compromising any of the well-established principles of industrial safety.

The original plant design provided fire protection services by a pressurized water system serving most areas throughout the building and grounds, a centralized CO₂ (Cardox) system for special areas, and portable extinguishers at strategic locations throughout the buildings.

A dedicated 1000 GPM diesel fire pump supplied river water to the pressurized water fire protection system with backup supply from two, 2000 GPM, screen-wash pumps. A jockey pump supplied by well water was provided to maintain the system pressure. An underground fire main circled the plant and served ten outside fire hydrants for the plant and 138 kV Switchyard. From the underground fire main, a header was routed through the Turbine Building and Fuel Building and was connected to the underground fire main on the North and South sides of the plant. Fifteen hose stations were provided for the Turbine Building, and one each for the Intake Structure, Chlorination Building, Fuel Building, and Shop area. Two water spray systems were provided for Transformers 1 and 11, and Transformer 12. In addition, the fire protection water system provided makeup and cooling water to the Post Incident Cooling System (Containment Spray). Remaining areas of the plant including the Reactor Building were provided with portable fire extinguishers except for special hazard areas. Special hazard areas were provided with CO₂ protection from a 4-ton liquid carbon dioxide storage unit. Automatic CO₂ systems were provided for the Turbine Oil Reservoir Room, Turbine Oil Storage Tank Room, Auxiliary Diesel Generator, Primary Feedwater Pumps, Secondary Feedwater Pumps and Paint Storage Room. CO₂ hose reels were provided for the Shop Welding Bay, Warehouse, Boiler Room, Air Compressor Room, and Turbine Generator Room. In addition, a CO₂ connection was provided with the Off-Gas piping for fire suppression and a connection was provided for Generator purging.

As originally supplied, the Fire Protection Systems and design features of Dresden Unit 1 compared well with the best of similar industrial fire protection practices for fossil fuel power

plants. The original Plant Technical Specifications and Operating License for Dresden Unit 1 are silent on fire protection features and the fire protection program as was the industry practice up to the occurrence of the cable fire at TVA's Browns Ferry Nuclear Plant on March 22, 1975.

In the aftermath of the Browns Ferry fire, the Nuclear Regulatory Commission conducted an evaluation directed toward improving the Fire Protection Programs at all licensed nuclear power plants. In February 1976, the NRC published NUREG-0050, "Recommendations Related to Browns Ferry Fire". As follow-up activities to put into practice the recommendations of NUREG-0050, the NRC promulgated the following documents:

- "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," NUREG-75/087, Section 9.5.1, "Fire Protection," May 1976, which includes "Guidelines for Fire Protection for Nuclear Power Plants" (BTP APCS 9.5-1), May 1976
- "Guidelines for Fire Protection for Nuclear Power Plants" (Appendix A to BTP APCS 9.5-1), August 23, 1976
- "Supplementary Guidance on Information Needed for Fire Protection Program Evaluation," September 30, 1976
- "Sample Technical Specification," May 12, 1977
- "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance," June 14, 1977
- "Manpower Requirements for Operating Reactors," June 5, 1978

All licensees were requested to: (1) compare their Fire Protection Programs with the new guidelines, and (2) analyze the consequences of a postulated fire in each plant area.

In compliance with the NRC's requests, ComEd made fire protection submittals dated October 8, 1976; November 30, 1976; December 28, 1976; March 17, 1977; March 29, 1977; July 19, 1977; March 20, 1979; May 30, 1979; and July 5, 1979. In addition, the NRC conducted a site inspection of the Dresden Fire Protection Program during the week of March 20-22, 1979. The original Fire Hazards Analysis for Dresden Unit 1 titled "Information Relevant to Fire Protection Systems and Programs Dresden Nuclear Power Station Unit 1" was forwarded in the March 29, 1977 submittal. On 3/22/78 the NRC issued License Amendment 25 incorporating existing elements of the Fire Protection Program into Technical Specifications. The Technical Specifications required the fire protection components to be operable whenever equipment/systems being protected were required to be operable. The Fire Protection Program for Dresden Unit 1 was incorporated into the Operating License with Amendment 30, effective 8/29/79. The NRC Safety Evaluation Report dated August 9, 1979 for Dresden Unit 1's Fire Protection Program was forwarded with Amendment 30 to the Operating License.

Dresden Unit 1 produced power commercially from April 15, 1960 to October 31, 1978. Being a first of its kind plant in a new industry, the unit experienced some significant problems during its operating life resulting in redistribution of radionuclides from the fuel to various parts of the primary piping systems. These collective events resulted in the need to perform a chemical decontamination of the primary piping systems in order to reduce radioactivity exposure associated with operating the plant. The Unit was taken off-line on October 31, 1978, to perform a chemical

decontamination of major primary piping systems and to back-fit it with additional safety systems and equipment to meet new and evolving federal regulations.

While shutdown for the chemical decontamination and upgrading of safety systems, the most serious accident in the operating history of U.S. commercial nuclear power plants occurred at Three Mile Island Unit 2 located near Middletown, Pennsylvania early in the morning of March 28, 1979. Even though this accident led to no deaths or injuries to plant workers or members of the nearby community, sweeping changes within the nuclear industry in areas of operator training, emergency response planning, human factors engineering, radiation protection, additional plant safety system design considerations, and many other areas of plant operation were mandated by the NRC in the aftermath of this incident.

In September of 1984, the chemical decontamination of Dresden Unit 1's primary systems was completed. This was the world's first large-scale chemical cleaning of an entire primary piping system and resulted in the removal of 753 curies of Cobalt 60 and 12.4 curies of Cesium-137.

In October of 1984, ComEd concluded that the age of Dresden 1 and its relatively small size did not warrant the additional cost, which was estimated to be in excess of \$300 million, to bring it into conformance with new regulations arising from the Three Mile Island Accident. Therefore, the decision was made to decommission the unit prematurely rather than commit additional capital funding.

Since Dresden Unit 1 was in a decommissioning status, the fire protection modifications committed to in the 1977 Fire Hazards Analysis submittal, and required by the Operating License and Technical Specifications, were no longer necessary since safe shutdown for a fire event was inherently addressed and the unit was not operating. As such, some of the modifications were not necessarily completed. In addition, during these dormant years, the Fire Hazard Analysis was not updated. License and Technical Specification Amendment No. 36 (dated July 23, 1986) did incorporate major changes to the fire protection program such as deletion of surveillance requirements for the Fire Detection System, CO₂ System, and Penetration Fire Barriers and reduction of the number of Fire Hose Stations required from 10 to 3. Fire protection remained in the Technical Specifications for Dresden Unit 1 up until Amendment 37 of the license was issued on September 3, 1993. At this time, the NRC removed fire protection systems from the specifications and revised License Condition 2.F to its present wording, which states that the "Dresden Administrative Procedures specify the fire protection program", and allows changes to the Fire Protection Program to be made as long as those changes do not decrease the effectiveness of the fire protection capability.

Prior to July 1996, implementation of 10CFR§50.48 fire protection requirements for decommissioned facilities was not clearly defined by the Commission. In 1994, Nexus Technical Services Corporation was contracted to perform an updated Fire Hazard Analysis to reflect the decommissioning state of the plant as a means of defining the Fire Protection Program for Dresden Unit 1. This Fire Hazards Analysis was not On-Site Reviewed and has not been docketed with the Commission. The analysis was formally issued to ComEd on 3-17-96 and is treated as an engineering report. On July 29, 1996, the NRC promulgated paragraph (f) of 10 CFR §50.48, which applies specifically to the Fire Protection Program for plants undergoing decommissioning. On July 15, 1998 the NRC issued for public comment a draft regulatory guide (DG-1069) providing the potential staff's interpretation of an "acceptable fire protection program" for plants undergoing decommissioning.

As such, questions have been raised as to whether the Fire Protection Program for Dresden Unit 1 is presently in conformance with regulatory requirements.

Fire Protection Regulatory Requirements:

The basic fire protection regulation applicable to nuclear power plants is provided by Criterion 3 of Appendix A to 10 CFR Part 50 (promulgated in 1971, as draft in 1967), which states the following:

Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Non combustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.

After the Browns Ferry Fire Event, the NRC promulgated several guidance documents of which the most significant was "Guidelines for Fire Protection for Nuclear Power Plants" (BTP APCS 9.5-1) dated August 23, 1976. Nuclear utilities were requested to compare their fire protection programs with the guidance contained in BTP APCS 9.5-1. It was in response to this request that the Fire Hazard Analysis of 1977 was submitted to the NRC in the March 29, 1977 submittal. While the Branch Technical Position contained guidance for a Fire Protection Program that was considered "acceptable to the staff" in satisfying General Design Criterion 3 of Appendix A, it was not a regulation and lacked the enforcement aspects of a regulation.

To bolster the regulatory enforcement aspects of nuclear power Fire Protection Programs; the NRC promulgated §50.48, the Fire Protection Rule, and Appendix R to 10 CFR 50 on November 19, 1980. Section (a) of §50.48 stated that "Each operating nuclear power plant must have a fire protection plan that satisfies Criterion 3 of Appendix A" while section (b) stated that "Appendix R ... establishes fire protection features required to satisfy Criterion 3 of appendix R ... with respect to certain generic issues for nuclear power plants licensed to operate prior to January 1, 1979". Section (b) also stated that except for Section III.G, III.J, and III.O, the provisions of Appendix R did not apply to power plants licensed to operate prior to January 1, 1979, to the extent that fire protection features proposed or implemented have been accepted by the NRC staff as satisfying the provisions of BTP APCS 9.5-1 as reflected in an issued Safety Evaluation Report. Section II.B of Appendix R stipulated that a fire hazards analysis be performed by qualified fire protection and reactor systems engineers for nuclear power plants. While Appendix R captured the requirement for a detailed Fire Hazards Analysis in a regulation, this requirement had been originally proposed in the NRC "requests" after the Browns Ferry fire and in BTP APCS 9.5-1. Position C.1.b.(1) of BTP APCS 9.5-1 states:

A detailed fire hazard analysis should be made during initial plant design to reflect the proposed construction arrangement, materials and facilities. This analysis should be revised periodically as design and construction progress and before and during major plant modifications.

On April 24, 1986, the NRC promulgated Generic Letter 86-10. This Generic Letter included a recommendation that nuclear stations include in a periodic FSAR update an incorporation of the fire protection program that has been approved by the NRC, including the Fire Hazards Analysis and major fire protection commitments, and a subsequent removal of the applicable Fire Protection Technical Specifications. By incorporating the Fire Protection Program into the FSAR, the plant could make changes to their program under the scope of 10CFR §50.59 and would not be required to submit fire protection changes to the NRC for approval prior to making the change. More specific guidance from the NRC on processing this change was provided in Generic Letter 88-12, dated August 2, 1988. While removing the Fire Protection Program to the FSAR, either directly or by reference, allows the ability for update under 10CFR §50.59, it also by inference implies a periodic update in accordance with 10 CFR §50.71.(e).(3) and (4).

On July 29, 1996, the NRC promulgated a revision to §50.48 and added paragraph (f) that applies to plants undergoing decommissioning. Paragraph (f) reads as follows:

Licensees that have submitted the certificates required under §50.82(a)(1) shall maintain a fire protection program to address the potential for fires which could cause the spread of radioactive materials (i.e., which could result in a radiological hazard).

- (1) The objectives of the fire protection program are to --
 - (i) Reasonably prevent fires from occurring;
 - (ii) Rapidly detect, control, and extinguish those fires which do occur and which could result in a radiological hazard; and
 - (iii) Ensure that the risk of fire-induced radiological hazards to the public, environment and plant personnel is minimized.
- (2) The fire protection program must be assessed by the licensee on a regular basis and revised as appropriate throughout the various stages of facility decommissioning.
- (3) The licensee may make changes to the fire protection program without NRC approval if these changes do not reduce the effectiveness of the fire protection for facilities, systems, and equipment which could result in a radiological hazard, taking into account the decommissioning plant conditions and activities.

Technical Specification and License Requirements:

In the period between submittal of the 1977 Fire Hazards Analysis and the issuance of Amendment 37 of the Dresden Unit 1 Operating License (9/3/93), the Fire Protection Program for Dresden Unit 1 was governed by Technical Specifications originally added to the Operating License with Amendment 30 (8/29/79). With Amendment 30, a number of upgrades to the Fire Protection Program were required before plant operation could be resumed. In addition, 10CFR50, Appendix R, Sections III.G, III.J, and III.O would have been applicable under §50.48(b). Amendment 36 of the License and Technical Specifications dated 7/23/86 incorporated revisions to address changes as a result of the decommissioned status. Since Dresden Unit 1 never resumed operation, after being shutdown on October 31, 1978 a detailed review of the Technical Specifications and

Appendix R for conformance during this period would by default conclude that compliance with the Technical Specifications and Appendix R was maintained.

Effective with Amendment 37 of the Dresden Unit 1 Operating License (9/3/93), License Condition 2.F was revised in the License and Fire Protection Technical Specifications were removed except for administrative type specifications. License Condition 2.F was revised to read as follows (Note: Footnote 1 was added for this document only and is not a part of the License):

The Dresden Administrative Procedures¹ specify the fire protection program. The Dresden Administrative Technical Requirements specify the limiting conditions for operation and surveillance requirements. These provisions are subject to the following:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not decrease the effectiveness of the fire protection capability.

Administrative Technical Specifications remaining with Amendment 37 of the Operating License are as follows:

- 6.1.C ... "The Vice President BWR Operations on the corporate level has responsibility for the Fire Protection Program. An Operating Engineer at the station will be responsible for implementation of the Fire Protection Program."
- 6.1.E ... "A training program for the fire brigade shall be maintained under the direction of the Operating Engineer and shall meet or exceed the requirements of Section 27 of the NFPA Code - 1975, except for fire brigade training sessions which shall be held at least quarterly."
- 6.1.H Fire Protection
 1. An independent fire protection and loss prevention program inspection and audit shall be performed at least once per 12 months utilizing either qualified off-site licensee personnel or an outside fire protection firm.
 2. An inspection and audit of the fire protection and loss prevention program shall be performed by a qualified outside fire consultant at least once per 36 months.

Amendment 39 of the Dresden Unit 1 Operating License (current amendment) retains License Condition 2.F but replaces the Technical Specification requirements with the following specifications:"

- 6.1.B The Unit 1 Decommissioning Plant Manager shall delegate to the Unit 2/3 Station Manager the responsibility to provide site support activities such as ... Site Fire Protection Program, ...

¹ Dresden Procedure DFPP 4100-01 describes the site fire protection program for Dresden Station and its administrative requirements. The specific language of the License Condition is not interpreted as requiring the fire protection program and its implementing procedures be addressed in DAPs but rather that the program is addressed in administrative procedures that exist at Dresden Nuclear Station.

- 6.8.A Written procedures shall be established, implemented, and maintained covering activities referenced below:

....

- 7. Fire Protection Program Implementation, and

....

Conformance:

In accordance with Unit 1 Technical Specification 6.1.B, the Unit 1 Decommissioning Plant Manager is required to delegate to the Unit 2/3 Station Manager the responsibility to provide the Site Fire Protection Program. Dresden procedure DFPP 4100-01 provides a single point of reference for all matters concerning fire protection at Dresden Nuclear Power Station. This procedure applies for Unit 1, 2 and 3 and is under the approval authority of the Station Manager.

A review of other Dresden Administrative Procedures indicate a number of procedures that are specifically identifiable as applicable to Unit 1. Among these are the following procedures:

- DFPS 4114-01, Unit 1 Fire Equipment Inspection
- DFPS 4123-01, Unit 1 Diesel Fire Pump Operability
- DFPS 4123-07, Unit 1 Fire Pump Capacity Check
- DFPS 4132-01, Verification of Unit 2/3 & Unit 1 Sprinkler Systems Integrity
- DFPS 4183-06, Unit 1,2,3 Heat/Smoke Detector Operability Test
- DFPS 4183-09, Unit 1, Reserve Auxiliary Transformer 12 Heat Detector Test

In addition, a number of site-wide fire protection procedures are inherent to Unit 1 activities as necessary. Examples are DFPP 4100-03, Fire Watch Procedure, DHP 0230-01, Control of Hot Work, and DHP 0230-02, Fire Protection for Transient Combustibles. The Dresden Administrative Technical Requirements (DATRs) are those requirements that are Station commitments for which a more formal tracking system is desired or requirements that have been removed from the Technical Specifications that must be administratively controlled. The Dresden Station Fire Protection Program is addressed in DATRs 3/4.1 and 3/4.2. A review of these DATRs indicates that Unit 1 equipment is reflected in these DATRs such as selected Unit 1 Fire Hose Stations, Suppression Systems and the Unit 1 Diesel Fire Pump.

The existence of the above listed procedures and others applicable to the Site Fire Protection Program provides objective evidence that conformance exists with License Condition 2.F which states that the "Dresden Administrative Procedures" specifies the fire protection program for Dresden Unit 1 and that the "Dresden Administrative Technical Requirements" specify limiting conditions for operation and surveillance requirements. In addition, the existence of these procedures and others applicable to the Site Fire Protection Program provides objective evidence of conformance with the requirements of Unit 1 Technical Specifications 6.1.B and 6.8.A.

Unit 1 fire protections features are addressed in Section 3.1.1 of the Unit 2/3 UFSAR where it is described that the Unit 1 Fire Protection System provides service to Unit 2/3 and in Section 5.4.6.3

where it is stated that the Unit 1 Diesel-driven Fire Pump automatically provides a backup supply of river water to the Fire Protection System on low pressure. In depth discussion of the Fire Protection Program for Unit 2/3 is largely absent from the UFSAR and in Section 9.5.1 the Dresden Unit 2 and 3 Fire Protection Reports, Volumes 1 through 5, and Fire Protection Documentation Package, Volume 1 through 13 are referenced for a discussion of the Dresden Fire Protection Program.

The Unit 2/3 Fire Protection Reports addresses Unit 1's fire protection interfaces with Unit 2/3 in Section 4.15.9 of Volume 1. This section describes the structural interface with Unit 2/3 at the west wall of the Unit 1 Turbine Building. Section 6 of Volume 1 of the Unit 2/3 Fire Protection Reports addresses Unit 1 in greater detail. This section summarizes an analysis to:

- Evaluate Unit 1 for existing fire hazards and adequacy of the 20 foot low transient combustible zone established between Unit 1 and Unit 2.
- Determine if Units 2/3 are adequately protected from a fire originating in Unit 1 and whether such a fire could impact the plant operation or safe shutdown of Unit 2 or Unit 3
- Provide recommendations to improve plant arrangement and administrative controls to assure adequate protection from a fire in Unit 1 during the SAFSTOR period.

This section concludes that a worst case fire originating in Unit 1 will not prevent safe shutdown of Unit 2 or Unit 3. In addition, the report makes a number of recommendations, which have since been adopted by ComEd, to enhance the level of safety associated by the proximity of Unit 1 to Units 2 and 3. This section is now dated in its discussion and should be updated since it refers to a modification in progress to separate the Unit 1 and Unit 2/3 Control Rooms. This modification has now been completed.

The Unit 1 Defueled Safety Analysis (DSAR) Section 3.2.2.2 describes Unit 1's role in providing electrical power for a number of Unit 2/3 emergency lights required for safe shutdown of Unit 2/3 in the event of a fire. The major discussion of the fire protection program as applied to Unit 1 is discussed in DSAR Section 3.2.2.8. This section discusses the Fire Protection Water Supply System, Fire Mains, Fire Pump, Fire Pump Diesel Engine, Diesel Fuel Supply, Fire Pump Controller, Fire Suppression Systems, Hose Stations and Standpipes, Water Spray and Sprinkler Systems, and Fire Barriers as applicable to Unit 1 fire protection applications and in support of Unit 2/3 where appropriate. The DSAR fire protection discussion is consistent with the NRC safety evaluation provided with License and Technical Specification Amendment 37 dated 9/3/93. Prior to the DSAR, the Decommissioning Program Plan submitted with the License and Technical Specification Amendment 36 stated that fire protection was to be maintained, as required, for continued use during SAFSTOR dormancy.

Based on the available documentation discussed above, it can be stated that as applied to Dresden Station Unit 1, site wide procedures exist that as applied to Unit 1 activities serve to reasonably prevent fires from occurring. In addition, fires, which do occur in areas that could reasonably present radiological hazards, can be readily detected by personnel or automatic detection means. For Unit 1, this is mainly accomplished due to the removal of all fuel from the Reactor Building and the significant decay period provided since ceasing operation in 1978, which minimizes areas where there is a radiological hazard potential. Fire suppression equipment in the form of hose stations, hydrants, and portable equipment are provided which support manual fire suppression efforts by the Site Fire Brigade for any fires that do occur. Automatic sprinkler systems providing

parial coverage are provided in the Fuel Building, the West Auxiliary Bay of the Turbine Building, the Turbine Building Cable Passageway, and the Cribhouse. These aspects address the regulatory requirements as delineated in §50.48.(f). The major emphasis of §50.48.(f) is the spread or release of radioactivity upon the occurrence of a fire. Although not proposed for the purposes of addressing §50.48.(f) compliance, the 1994 updated Fire Hazard Analysis does address fire induced release of radioactivity and therefore serves as a means of documenting Dresden Unit 1's compliance with §50.48.(f).

One major aspect of a fire protection program conformance to regulatory requirements is the requirement for a detailed Fire Hazards Analysis that demonstrates how NRC guidelines and regulations are satisfied by a plant's Fire Protection Program. For Dresden Unit 1, this subject requires further review. The original Fire Hazards Analysis for Dresden Unit 1 was forwarded to the NRC in March of 1977. This Fire Hazards Analysis was not updated during the period between 1978 and 1994. The "requirement" for a formal Fire Hazards Analysis is contained in Appendix R, Section II.B. The applicability of Appendix R is to operating plants and the emphasis is on achieving safe plant shutdown in the event of a fire to avoid a reactor accident of greater consequences. Since, Dresden Unit 1 was not "operating" after October 1978 and was maintained in a permanent shutdown condition, it can reasonably be concluded that Appendix R, Section II.B was not applicable and that periodic FHA updates were not required. In accordance with the guidance of BTP APCS 9.5-1, updates of the Fire Hazards Analysis were recommended before and during major modifications. Since Dresden Unit 1 was shutdown and preparing for decommissioning, major modifications were not being pursued. In addition, incorporation of the Fire Protection Program into the FSAR was not processed for Dresden Unit 1 so periodic updating in accordance with 10 CFR §50.71 was not applicable. In Amendment 36, changes to the Technical Specifications and License were made in accordance with NRC regulations. In 1994, Dresden Unit 1 began an update of the Fire Hazards Analysis to reflect the SAFSTOR status. This revision was not On-Site Reviewed and docketed with the Commission. The update was issued for use in March of 1976. Subsequently, in 1998, the DSAR was issued to include a description of the regulatory Fire Protection Program for Dresden Unit 1 consistent with the 9/3/98 SER. The description of the Fire Protection Program in the DSAR is subject to, and will be maintained in accordance with, 10 CFR §50.71. Since this time, the NRC has issued for public comment a Draft Regulatory Guide for Fire Protection Programs For Decommissioning Plants. Within this draft guideline, the NRC has included a discussion of the appropriate areas to be addressed in the Fire Hazards Analysis for a decommissioning plant and the requirement for periodic updating. The current DSAR does not contain the level of detail specified in the proposed Regulatory Guide. Several public comments have been submitted which question the need for such a detailed review and as of yet, there is no clear requirement for a detailed Fire Hazards Analysis with periodic updating requirements for a decommissioning nuclear plant in the language of the applicable regulations.

Conclusion:

Dresden Unit 1 was permanently shutdown prior to the promulgation of Appendix R. As such, Appendix R is not applicable. A Fire Protection Program has been maintained at Dresden Station that addresses Unit 1 specific Technical Specifications and License Condition. Clear conformance with Dresden Unit 1 Technical Specifications and License can be demonstrated. Conformance with regulatory requirements is demonstrated by the DSAR discussion and consistency exists between the Unit 2/3 UFSAR and Fire Protection Reports. Due to its non-operating status, the Fire Hazards Analysis for Unit 1 has not been maintained as it would have been for an operating nuclear plant (updated and submitted to the Commission every 24 months) nor is it clear in

applicable regulations that it was required to be. An update to the Fire Hazards Analysis was prepared to reflect the SAFSTOR condition of decommissioning. This update was not On-Site Reviewed and docketed with the Commission. Draft regulatory guidance has recently been released for public comment from which it can be "inferred" that the NRC staff expects that a formal fire hazards analysis will be maintained and updated periodically for plants in the decommissioning phase.

Dresden Unit 1's Fire Protection Program is encompassed by the Dresden Site Fire Protection Program. Review of the "operating history" since 1978's shutdown and the present indicates that conformance with regulatory requirements has been maintained. Regulations do not clearly require that a detailed Fire Hazards Analysis for a decommissioned plant be performed and updated with a specified periodicity. Draft regulatory guidance suggests that a Fire Hazard Analysis be maintained for decommissioned plants. The 1996 Update of Dresden Unit 1's Fire Hazard Analysis which is maintained as an engineering report provides documentation of compliance with radiation release requirements of 10 CFR §50.48.(f).

Recommendations:

The Unit 1 Updated Fire Hazards Analysis should be maintained as an engineering report to document the compliance with 10 CFR §50.48.(f) and updated at major changes in decommissioning activities. To assure proper tracking of potential changes to the report and ensure updating as required, a Dresden Decommissioning procedure should be developed to address the Dresden Site Fire protection Program as it applies to Unit 1. The present planned and budgeted "update" scheduled for completion during the first quarter of 1999 should consider the "guidance" contained in the recently released NRC draft regulatory guide. Further consideration of the issues identified in this report will be required following issuance of an NRC Regulatory Guide. Adequate Station controls (OPEX Program) currently exist for performing such a review. To assure proper interface between the Unit 2/3 Fire Protection Report and the Fire Hazards Analysis Report for Unit 1, appropriate marked-up pages of the Unit 2/3 Fire Protection Report should be provided to Unit 2/3 Engineering for their use in updating the Unit 2/3 Fire protection Reports.

References:

1. Amendment 30 to Dresden Unit 1 Facility Operating License dated 8/29/79
2. Amendment 36 to Dresden Unit 1 Facility Operating License dated 7/23/86
3. Amendment 37 to Dresden Unit 1 Facility Operating License dated 9/3/93
4. Amendment 39 of Dresden Unit 1 Facility Operating License dated 7/8/97
5. 10CFR50, Appendix A, General Design Criteria for Nuclear Power Plants
6. 10CFR §50.48, Fire Protection
7. 10CFR Appendix R to Part 50, Fire Protection Program for Nuclear Power Plants Operating Prior to January 1, 1979.

8. Draft Regulatory Guide DG-1069, Fire Protection Program for Nuclear Plants During Decommissioning and Permanent Shutdown, July 1998
9. Three Mile Island 2 Accident, <http://www.nrc.gov/OPA/gmo/tip/tmi.htm>
10. Dresden Unit 1 Defueled Safety Analysis Report
11. Dresden Unit 2/3 Updated Final Safety Analysis Report
12. Dresden Unit 2/3 Fire Protection Reports
13. Dresden Administrative Technical Requirements 3/4.1 and 3/4.2
14. Dresden Procedures, DAP, DFPP, DFPS, and DHP series
15. NRC Generic Letter 86-10, Implementation of Fire protection Requirements, dated 4/24/86
16. NRC Generic Letter 88-12, Removal of Fire Protection Requirements From Technical Specifications, dated 8/2/88
17. 10CFR §50.71, Maintenance of Records, Making of Reports

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Volume 5 – Fire Protection Analysis/Supplementary Guidance

- I. Combustible Loading
 - 1. Procedure for Determining Fire Loading
 - 2. Combustible Load Calculation
 - 3. Supporting Documentation

- II. Structural Steel Analysis
 - 1. Structural Steel Beam Fire Exposure Evaluation
 - 2. Fire Resistance of Unprotected Steel on the Refuel Floor and in the Control Room
 - 3. Beam Stress Interactions with Dead Load at Elevated Temperatures
 - 4. October 25, 1989 Professional Loss Control letter from T. J. McCormack to L. Tapella (Dresden) regarding Auxiliary Electrical Equipment Room and Computer Room Structural Steel Fire Proofing.

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 - A PLC Evaluation of Fire Rated Electrical Penetration Seals
 - B September 29, 1978 Fire Resistance Test of Typical Cable Penetration Fire Stops
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 - D Electrical Penetration Seal Supporting Documentation
 - E PLC Test Report dated April 21, 1987, "Evaluation of Penetration Seal Systems at the Dresden and Quad Cities Nuclear Power Plants" (seal test date October 15, 1986.)
 - F Additional Electric Penetration Seal/Fire Stop Supporting Information
 - G December 17, 1999, "Penetration Seal Assessment" for Electrical and Mechanical Penetration Design Details
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 - A Fire Seal Procedure for Hoses
 - B Temporary Electrical and Mechanical Fire Seals in Mechanical Penetrations
 - 4 Fire Rated Coatings
 - 5 Fire Rated Wraps
 - A Test Reports
 - B 3M Fire Wrap Qualification Evaluation
 - 6 Penetration Seal Study (Phase 1)
 - 7 Interior Conduit Seals

further document the fire resistance of typical penetration seal installations presently found at the Dresden and Quad Cities Nuclear Power Plants.

Tab 2-F - May 27, 1988, PLC letter from C. A. Ksobiech to J. McDonald (CECo), Substitution of Nelson Electric Caulk (CLK) or 3M Fire Barrier Caulk (CP-25) for Mastic Repairs on CECO Ceramic Fiber/Mastic Penetration Seals.

June 10, 1988, PLC letter from D. J. Garces to J. McDonald (CECo), Substitution of Nelson electric Caulk (CLK) for Mastic Repair on CECO Fiber/Mastic Penetration Seals.

September 20, 1990, PLC letter from C. A. Ksobiech to M. Dillon (CECo), Unit 1 Penetration Seal Information.

November 2, 1990, S&L letter from B. M. Barth to B. M. Viehl (CECo), Evaluation of Pyrocrete 241 Test Results for NRC-90-14.

March 7, 1988, CECO letter from T. G. Hausheer to R. L. Bax, E. D. Eenigenburg and W. B. Fancher, Cable Tray Penetration Fire Seals for Dresden and Quad Cities Station.

June 19, 1987, PLC letter from A. W. Borum III to E. D. Eenigenburg (CECo), Appendix A Fire Stop/Break Surveillance.

Tab 2-G - NTSC Evaluation, dated December 17, 1999, "Penetration Seal Assessment."

3.3 Tab 3 - Fire Rated Temporary Seals Index.

Tab 3-A - Fire Seals Procedure for Hoses.

a. Professional Loss Control, Inc., "Fire Seal Procedure for Hoses," September 5, 1985.

The purposes of this procedure is to identify the methods to be used to seal fire barrier penetrations made to route hoses through existing penetrations of up to 12" in diameter.

b. Test Report #TR-128, "Fire and Hose Stream Test of #TCO-013 Ceramic Blanket Seal or a Mechanical Penetration," December 19, 1983. (Attachment I to item a).

Report describes test procedures and observations during the test.

- c. 3m Brand Fire Barrier Caulk CP25 Test Data
- Caulk characteristics and installation, application and clean-up guidance is provided.

- d. CECo, D. L. Farrar letter of September 21, 1984, to J. G. Keppler (NRC).

Letter provides CECo response to notice of violation as a result of an inspection conducted June 24 through August 1984.

Tab 3-B – Temporary Fire Seals in Mechanical Penetrations

Temporary Mechanical Seals are covered in Dresden Station Procedure DFPP 4175-1, “Fire Stop Integrity and Maintenance.”

3.4 Tab 4 – Pyrocrete

- a. Carboline, Fireproofing Products Divisions “Architectural Specification for Pyrocrete Fireproofing” Manufacturer’s specifications for Pyrocrete.

3.5 Tab 5 – Fire Rated Wraps

- Tab 5-A - Southwest Research Institute, “Qualification Fire Test of a Protective Envelope System.” June 1985.

This report covers fire tests on cable wraps.

- Tab 5-B – NTSC Evaluation, dated December 31, 1999, “3M Fire Wrap Qualification Evaluation.”

This report resolves Dresden Station 3M fire wrap issues and qualifies the 3M configurations identified in the scope of this project.

4.0 SUPPORTING DOCUMENTATION

Q.44 Fire Protection Drawings

DFPP 4175-1 Fire Stop Integrity and Maintenance

DFPP 4175-2 Operating Fire Stop/Barrier Surveillance

DFPP 4175-3 Shutdown Fire Stop Surveillance

DFPP 4195-1 Halon Systems Semi-Annual Maintenance

DFPP 4195-2 AEER Halon System Test

5.0 SUPPLEMENTAL INFORMATION

“Fire Protection Evaluation Report,” July 1985 (available in FPPDP Vol. 6, Tab VII).

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Fire Rated Electrical Penetrations

<u>Tab</u>	<u>Title</u>
A	PLC Evaluation of Fire Rated Electrical Penetration Seals
B	September 28, 1978 Fire Resistance Test of Typical Cable Penetration Fire Stops
C	June 19, 1978 Penetration Seal Fire Test and Commonwealth Edison Fire Stopping Details
D	Electrical Penetration Seal Supporting Documentation
E	PLS Test Report dated April 21, 1987, Evaluation of Penetration Seal Systems at the Dresden and Quad Cities Nuclear Power Plants (seal test date October 15, 1986)
F	Additional Electrical Penetration Seal/Fire Stop Supporting Information
G	December 17, 1999, "Penetration Seal Assessment" for Electrical and Mechanical Penetration Design Details.