

FIRE PROTECTION SAFE SHUTDOWN
ANALYSIS

SUPPLEMENT 2

TURBINE BUILDING MEZZANINE

DRESDEN STATION
UNITS 2 AND 3

COMMONWEALTH EDISON COMPANY

JANUARY 1981

8 102200189

3.1.12 FIRE ZONE 8.2.6C

(Unit 2 Turbine Building Mezzanine, Elevation 538 ft., area bounded by columns/rows G-H/33-38, Fire Protection Figure 2.2-8-4)

3.1.12.0 Introduction

The purpose of this analysis is to demonstrate the capability of achieving and maintaining cold shutdown within 72 hours for a postulated fire in the Dresden 2 Turbine Building Mezzanine area at Elevation 538' bounded by columns/rows G-H/33-38. For the purpose of this analysis the postulated fire, hot shutdown, cold shutdown, analysis, criteria, and evaluation method are as discussed in Section 1 of the Dresden 2 & 3 Safe Shutdown Analysis. Tables 2-2 of Safe Shutdown Analysis and Supplement 1, Cold Shutdown, lists shutdown equipment.

3.1.12.1 Shutdown Method3.1.12.1.1 Unit 2 Shutdown Method3.1.12.1.1.1 Unit 2 Hot Shutdown Method

Reactivity Control - Reactor Protection System

Decay Heat Removal - Safety Valves, Target Rock Valve, and Isolation Condenser (IC) with

makeup water from the Condensate Transfer Pumps or the Service

Water Pumps

Reactor Water Makeup - Control Rod Drive Pump 2B

3.1.12.1.1.2 Unit 2 Cold Shutdown Method

Shutdown Cooling System, Unit 3 Reactor Building
Closed Cooling Water System, Service Water System

A list of shutdown related cable functions which are routed through this zone is attached. The 4 kV feed between SWGR 23 and SWGR 23-1 is routed through this fire zone. However, the Division I feed is independent of this area and remains available. The isolation condenser valves can be manually operated. The Diesel Generators can be locally controlled. Cables for the 2/3 Diesel Generator Cooling Water Pump are routed through this area. However, this pump has an alternate power source from Unit 3 independent of this area. Service water is also available to cool Diesel Generator 2/3. Control cables to the Shutdown Cooling Pumps are routed through this area. These pumps can be controlled locally at the switchgear. Cables to Reactor Building Closed Cooling Water Pumps 2A, 2B, and 2/3 are routed through this area. Cooling water is available from Unit 3 by opening manual valves in the Reactor Building. The shutdown cooling valves can also be manually operated. Sufficient time is available to deinert the drywell, allowing entry for manual operation of MO2-1001-1A & 1B if necessary, or the valves could be electrically operated from the MCC controlling the valves located in the Reactor Building.

3.1.12.1.2 Unit 3 Shutdown Method

All Unit 3 shutdown methods are independent of this Unit 2 fire zone.

3.1.12.2 Fire Protection Measures

The automatic sprinkler system has been extended to provide adequate coverage for the cables between G-H/33-38. The actuation station for the H₂ seal oil deluge system has been relocated away from the area. A water hose reel, a CO₂ reel, and a portable CO₂ extinguisher are located in this area. Several other portable CO₂ and dry chemical extinguishers are readily available from adjacent areas. Considering the low fire loading, cable tray fire stops, and fire protection measures, it is not credible to postulate a fire occurring and developing into proportions that could possibly affect more than one safety division.

3.1.12.3 Conclusion

With credit for local control of pumps and the Diesel Generators, manual operation of necessary valves, and local monitoring of instrumentation in the Reactor Building, alternate shutdown capability exists for a postulated fire on the Turbine Building mezzanine, Elevation 538 feet, bounded by columns/rows G-H/33-38.

3.1.12.4 SHUTDOWN RELATED CABLE FUNCTIONS

3.1.12.4.1 Unit 2 Shutdown Related Cable Functions

Auto Pressure Relief Valves

2-0203-3A (A, I)

2-0203-3B (A, I)

2-0203-3C (A, I)

2-0203-3D (A, I)

2-0203-3E (A, I)

Isolation Condenser Method Makeup Water Pumps

2A-4301 Condensate Transfer Pump Control (BOP)

Isolation Condenser Valves

PD2-1301-17 (P, I)

PD2-1301-20 (P, II)

MO2-1301-10 (A, BOP)

MO2-4102 (A, BOP)

MO2-1301-3 (A, II)

MO2-1301-4 (P, I)

MO2-1301-1 (P, I)

MO2-1301-2 (P, II)

HPCI Valves

MO2-2301-3 (A, II)

MO2-2301-5 (P, II)

MO2-2301-6 (P, II)

AO2-2301-7 (P, II)

3.1.12.4.1 Unit 2 Shutdown Related Cable Functions (Cont'd)

HPCI Valves (Cont'd)

MO2-2301-8 (A, II)
 MO2-2301-9 (P, II)
 MO2-2301-14 (P, II)
 PD2-2301-28 (P, II)
 SO2-2301-31 (P, II)
 SO2-2301-32 (P, II)
 MO2-2301-35 (A, II)
 MO2-2301-36 (A, II)
 MO2-2301-48 (P, II)
 MO2-2301-49 (P, II)
 PD2-2301-64 (A, II)
 PD2-2301-65 (P, II)

HPCI Equipment

HPCI Pump (II)
 HPCI Turbine (II)
 Gland Seal Condenser Hotwell Drain Pump (II)
 Aux. Oil Pump (II)
 Gland Seal Condenser Exhaust Fan (II)
 Emergency Bearing Oil Pump (II)
 Aux. Cooling Water Pump 2-2301-57 (II)
 HPCI Turbine Turning Gear (II)

3.1.12.4.1 Unit 2 Shutdown Related Cable Functions (Cont'd)

LPCI Pumps

2A-1502 (I)

2B-1502 (I)

2C-1502 (II)

2D-1502 (II)

LPCI Valves

MO2-1501-3A (P, I)

MO2-1501-3B (P, II)

MO2-1501-5A (P, I)

MO2-1501-5B (P, II)

MO2-1501-5C (P, II)

MO2-1501-5D (P, II)

MO2-1501-11A (A, I)

MO2-1501-11B (A, II)

MO2-1501-13A (A, I)

MO2-1501-13B (A, II)

MO2-1501-21A (A, I)

MO2-1501-21B (A, II)

MO2-1501-22A (A, I)

MO2-1501-22B (A, II)

MO2-1501-32A (P, I)

MO2-1501-32B (P, II)

AO2-1501-25A (P, I)

AO2-1501-25B (P, II)

MO2-0202-5A (P, I)

MO2-0202-5B (P, II)

3.1.12.4.1 Unit 2 Shutdown Related Cable Functions (Cont'd)

Diesel Generator Auxiliary Equipment

LPCI System Breaker Trip Interlock to Relay 201 (II)

Interlock from Undervoltage Relay 127B24-1X1 and

Breaker 152-2422 to Relays 102B & 104B (II)

DG 2 Metering (II)

DG 2 CT Feeds (II)

DG 2 Feed Breaker Control (II)

LPCI System Breaker Trip Interlock to Relay 101 (I)

DG 2/3 Metering (I)

DG 2/3 Governor Control (I)

DG 2/3 Start-Stop Control (I)

DG 2/3 Voltage Regulator (I)

DG 2/3 CT Leads (I)

DG 2/3 Feed-Breaker Control (I)

DG 2/3 Cooling Water Pump (I)

Shutdown Cooling Equipment

Breaker Control - Shutdown Cooling Pump 1002A (BOP)

Breaker Control - Shutdown Cooling Pump 1002B (BOP)

Breaker Control - Shutdown Cooling Pump 1002C (BOP)

Reactor Building Cooling Water Pump 2A (BOP)

Reactor Building Cooling Water Pump 2B (BOP)

Reactor Building Cooling Water Pump 2/3 (BOP)

3.1.12.4.1 Unit 2 Shutdown Related Cable Functions (Cont'd)

Shutdown Cooling Valves

MO2-1001-1A	(A, I)
MO2-1001-1B	(A, I)
MO2-1001-2A	(A, II) DC
MO2-1001-2B	(A, II) DC
MO2-1001-2C	(A, II) DC
MO2-1001-4A	(A, -II) DC
MO2-1001-4B	(A, II) DC
MO2-1001-4C	(A, II) DC
MO2-1001-5A	(A, I)
MO2-1001-5B	(A, I)
MO2-3701	(P, BOP)
MO2-3704	(A, BOP)

3.1.12.4.2 Unit 3 Shutdown Related Cable Functions

None

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