CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 1

PROCEDURE TYPE: ALTERNATIVE SAFE SHUTDOWN PROCEDURE

NUMBER: ASSD-06

PROCEDURE TITLE: REACTOR BUILDING SOUTH

Rev. 0

4/4/88

RB.1

APPROVED BY: S. J. Fisley
General Manager/Manager-Operations

Date: 4/13/88

LIST OF EFFECTIVE PAGES

ASSD-06

Page(s)	Revision
1-23	0

R B.

A. TITLE

Reactor Building South

B. REFERENCES

1. Per 10CFR50 Appendix 'R' sections III.G & L.

2. Per 10CFR50 Appendix 'R' section III.J.

C. ENTRY CONDITION

This procedure is entered from Alternative Safe Shutdown Index ASSD-01.

1. A fire has occurred in an area containing Alternative Safe Shutdown Train B equipment,

AND

2. The Shift Foreman has determined that the reactor is to be brought to Cold Shutdown using Alternative Safe Shutdown Train A.

The purpose of this procedure is to provide supplemental actions to be used concurrently with EOP'S and other operations procedures to achieve and maintain Cold Shutdown coincident with or without a 72 hour loss of off-site power. RB.1

D. OPERATOR ACTIONS

_____ 1. IF while executing this procedure, the fire is extinguished AND the the Shift Foreman determines that no action is required, THEN EXIT this procedure.

_____ 2. OBSERVE the following parameters on instruments indicated while performing actions to achieve and maintain cold shutdown.

Instrument	Location
1-CAC-TR-4426-1 Suppression Pool Temp. (Pt. 1)	Control Room Panel
1-CAC-LR-2602 Torus Level	Control Room Panel
1-C32-PI-R605A Reactor Pressure	Control Room Panel
1-C32-LI-R605A Reactor Water Level	Control Room Panel

_____ 3. IF diesel generator building AND/OR reactor building AND/OR service water building entry is required to restore OR monitor equipment, THEN

_____ a. DISPATCH the following minimum manpower for performance of this procedure.

Reactor Building - 1 Auxiliary Operator
Service Water Building - 1 Auxiliary Operator
Diesel Generator Building - 1 Auxiliary Operator

_____ b. OBTAIN the following keys from the Shift Foreman's Key Locker

_____ (1) ASSD Equipment Cabinet Key #148
_____ (1) ASSD Flashlight Tool Box Key #160

_____ c. OBTAIN Security Access Keys from SAS Security Officer located in the Control Room

AND PROCURE the following equipment from the ASSD Equipment Cabinet:

For Reactor Building

_____ (1) Flashlight
_____ (1) Sound powered phone
_____ (1) Twenty-five foot sound powered phone extension cord
_____ (1) Copy of this procedure
_____ (6) Remote Shutdown Keys, serial T112
_____ (1) Security Access Key

For Service Water Building

_____ (1) Flashlight
_____ (1) Sound powered phone
_____ (1) Twenty-five foot sound powered phone extension cord
_____ (1) Copy of this procedure
_____ (1) Security Access Key

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For Diesel Generator Building

_____ (1) Flashlight
_____ (1) Sound powered phone
_____ (1) Twenty-five foot sound powered phone extension cord
_____ (1) Copy of this procedure
_____ (1) Security Access Key
_____ (14) Door Wedge Blocks

_____ d. USE appropriate figures in this procedure to provide access/egress routes, equipment and communication locations.

_____ 4. IF Diesel generator operation is required, THEN BLOCK OPEN Diesel Generator Building doors, as indicated on Attachment 1, to establish ventilation for Diesel Generator operations.

****

CAUTION

Cooldown rates above 100°F/hr (RPV cooldown rate LCO) may be required to accomplish this step.

****

_____ 5. ENSURE Safety Relief Valve (SRV) high/low pressure interface is provided by performing the following:

_____ a. OPEN ADS Relay Logic A and B Control Panel, H12-628, Circuit Breaker at 125/250V DC Distribution Panel 3B Ckt No. 11.

_____ b. PLACE ASSD ADS/RHR Logic Power Supply Isolation Switch on panel H12-P617 to ASSD-2 position.

_____ 6. ENSURE Main Steamline Isolation Valve (MSIV) high/low pressure interface is provided by performing the following:

_____ a. PLACE Inboard MSIV AC Power Isolation Switch (keylock) on panel H12-P622 in ISOL position. RB.1

_____ b. PLACE Outboard MSIV AC Power Isolation Switch (keylock) on panel H12-P623 in ISOL position.

_____ c. OPEN the following 125V DC breakers:

_____ (1) Inboard Isolation Valve Logic Control Panel, H12-P622, Circuit Breaker at 125V DC Distribution Panel 3A Ckt 12.

_____ (2) Outboard Isolation Valve Logic Control Panel, H12-P623, Circuit Breaker at 125V DC Distribution Panel 3B Ckt 12.

****

CAUTION

Performance of the following defeats HPCI high area temperature logic.

****

_____ 7. IF HPCI operation is required, THEN

_____ a. PLACE HPCI Logic A Switch, B21-S6A on panel H12-P614 in TEST position.

_____ b. PLACE HPCI Logic B Switch, B21-S6B on panel H12-P614 in TEST position.

_____ c. OPERATE HPCI per OP-19.

_____ 8. IF operation of HPCI Steam Supply Inboard Isolation Valve, 1-E41-F002, is required AND 1-E41-F002 CANNOT be operated from the RTGB, OR power is NOT available from MCC 1XD, THEN

_____ a. IF MCC 1XD is NOT accessible due to fire, THEN the circuit breaker control switch in the OFF position for Reactor Building MCC 1XD at 480V Unit Substation E8 compartment A08.

_____ b. IF MCC 1XD IS accessible, THEN PLACE the circuit breaker control switch in the OFF position for HPCI Steam Supply Inboard Isolation Valve, 1-E41-F002, at MCC 1XD compartment DW1. R.B.

_____ c. PLACE the circuit breaker control switch in the ON position for HPCI Steam Supply Line Isolation Valve, 1-E41-F002, (ASSD Feed) at MCC 1XC compartment DS1.

_____ d. IF 1-E41-F002 is required to be Open, THEN PLACE the ASSD Keylock Control Switch in the OPEN position, at MCC 1XC compartment DS1.

_____ e. IF 1-E41-F002 is required to be Closed, THEN PLACE the ASSD Keylock Control Switch in the CLOSED position, at MCC 1XC compartment DS1.

_____ 9. IF operation of HPCI Turbine Exhaust Vacuum Breaker Valve, 1-E41-F079, is required AND 1-E41-F079 CANNOT be operated from the RTGB OR power is NOT available from MCC 1XB, THEN

_____ a. IF MCC 1XB is NOT accessible due to fire, THEN PLACE the circuit breaker control switch in the OFF position for Reactor Building MCC 1XB at 480V Unit Substation E6 compartment AW0.

OR

_____ b. IF MCC 1XB IS accessible, THEN PLACE the circuit breaker control switch in the OFF position for HPCI Turbine Exhaust Vacuum Breaker Valve, 1-E41-F079, at MCC 1XB compartment DQO.

_____ c. PLACE the circuit breaker control switch in the ON position for HPCI Turbine Vacuum Breaker Valve, 1-E41-F079, (ASSD FEED) at MCC 1XC compartment DT2.

_____ d. IF 1-E41-F079 is required to be Open, THEN PLACE the ASSD Keylock Control Switch in the OPEN position, at MCC 1XC compartment DT2.

_____ e. IF 1-E41-F079 is required to be Closed, THEN PLACE the ASSD Keylock Control Switch in the CLOSE position, at MCC 1XC compartment DT2.

_____ 10. IF operation of Suppression Pool Suction Valve, 1-E41-F042 is required and 1-E41-F042 CANNOT be operated from the RTGB due to HPCI logic interlocks, THEN

_____ a. PLACE Valve E41-F042 Interlocks Bypass Switch, E41-SS-5401 keylock switch on panel H12-P601 in BYPASS position.

_____ b. OBSERVE amber indicating lamp above keylock switch illuminated. R B.1

_____ c. OPERATE 1-E41-F042 as required from the RTGB.

_____ 11. PERFORM the following to ensure suppression pool level indication is available.

_____ a. PLACE keylock Isolation Switch for Valve CAC-SV-1219C, Y9A-IS1, at Junction Box Node Y9A; Reactor Building North Wall, El. 20' in ISOLATE position.

_____ b. PLACE keylock Isolation Switch for Valve CAC-SV-4344, Y9A-IS2, at Junction Box Node Y9A, Reactor Building North Wall, El. 20' in ISOLATE position.

_____ 12. VERIFY a flow path DOES NOT exist from the nuclear to conventional header through Conventional Service Water Pumps 1A AND 1C Discharge Valves by performing the following:

_____ a. PLACE the circuit breaker control switch in the OFF position for Conventional Service Water Pump 1A Discharge Valve To Conventional Header, 1-SW-V13, at MCC 2PB compartment E45.

_____ b. PLACE the circuit breaker control switch in the OFF position for Conventional Service Water Pump 1A Discharge Valve To Nuclear Header, 1-SW-V14, at MCC 2PB compartment E44.

_____ c. VERIFY Closed OR Manually CLOSE Conventional Service Water Pump 1A Discharge Valve to EITHER the Nuclear Header, 1-SW-V14 OR Conventional Header, 1-SW-V13.

_____ d. PLACE the circuit breaker control switch in the OFF position for Conventional Service Water Pump 1C Discharge Valve To Conventional Header, 1-SW-V17, at MCC 1PB compartment BX8.

_____ e. PLACE the circuit breaker control switch in the OFF position for Conventional Service Water Pump 1C Discharge Valve To Nuclear Header, 1-SW-V18, at MCC 1PB compartment BX9.

_____ f. VERIFY Closed OR Manually CLOSE Conventional Service Water Pump 1C Discharge Valve to EITHER the Nuclear Header, 1-SW-V18 OR Conventional Header, 1-SW-V17.

_____ 13. PERFORM the following to prevent spurious operation of safe shutdown service water valves fed from MCC 1X9.

RB

_____ a. IF MCC 1XB is NOT accessible due to fire, THEN PLACE the circuit breaker control switch in the OFF position for Reactor Building MCC 1XB at 480V Substation E6 compartment AW0.

OR

_____ b. IF MCC 1XB IS accessible, THEN

_____ (1) PLACE the circuit breaker control switch in the OFF position for RHR Heat Exchanger B Service Header Outlet Valve, 1-E11-PDV-F068B, at MCC 1XB compartment DN1.

_____ (2) PLACE the circuit breaker control switch in the OFF position for RHR Service Water Booster Pumps B and D Inboard Isolation Valve, 1-SW-V105, at MCC 1XB compartment DM1.

_____ (3) PLACE the circuit breaker control switch in the OFF position for Service Water to RHR Service Water Header Cross-tie Valve, 1-SW-V102, at MCC 1XB compartment DM6.

_____ (4) PLACE the circuit breaker control switch in the OFF position for Nuclear Service Water to Vital Header Inboard Isolation Valve, 1-SW-V117, at MCC 1XB compartment DP2.

_____ c. Manually CLOSE RHR Heat Exchanger B Service Header Outlet Valve 1-E11-PDV-F068B.

_____ d. Manually OPERATE the following valves as required.

_____ (1) Nuclear Service Water Supply Valve, 1-SW-V105

_____ (2) Conventional-Nuclear Header Cross-tie Valve, 1-SW-V102

_____ (3) Nuclear Service Water To Vital Header [illegible], 1-SW-V117

_____ 14. PERFORM the following to prevent spurious operation of Nuclear Header To RBCCW Heat Exchangers Isolation Valve, 1-SW-V106.

_____ a. PLACE the circuit breaker control switch in the OFF position for Nuclear Header To Heat Exchangers Isolation Valve, 1-SW-V106, at MCC 1XA compartment DE3.

_____ b. Manually OPERATE Nuclear Header To RBCCW Heat Exchangers Isolation Valve, 1-SW-V106 as required. RB.

_____ 15. IF operation of RHR Service Water System is required AND RHR Service Water Booster Pumps are NOT available, THEN REFER to OP-43.

_____ 16. To DEPRESSURIZE the reactor to achieve cold shutdown THEN OPEN AND Leave OPEN SRV 1-B21-F013F from the RTGB.

_____ 17. IF operation of Shutdown Cooling Outboard Suction Isolation Valve, 1-E11-F008 is required, AND power is NOT available from MCC 1XDB, THEN

_____ a. VERIFY OFF OR PLACE the circuit breaker control switch in the OFF position for Shutdown Cooling Outboard Suction Isolation Valve 1-E11-F008, at MCC 1XDB compartment B50.

_____ b. PLACE the circuit breaker control switch in the OFF position for RHR Suction Isolation Valve, 1-E11-F008, (ASSD FEED) at MCC 1XDA compartment B26.

_____ c. IF 1-E11-F008 is required to be Open, THEN PLACE Close/Off/Open Keylock Switch in the OPEN position, at MCC 1XDA compartment B26.

_____ d. IF 1-E11-F008 is required to be Closed, THEN PLACE the Close/Off/Open Keylock Switch in the CLOSE position, at MCC 1XDA compartment B26.

_____ 18. WHEN Shift Foreman determines:

_____ a. Diesel Generator Building doors that were opened/blocked open for Diesel Generator ventilation are no longer required to be open, THEN RESTORE all Diesel Generator Building doors that were opened on Attachment 1 to the closed position.

_____ / _____

_____ b. Safety Relief Valves (SRV's) can be operated from the RTGB, THEN

_____ (1) PLACE ASSD ADS/RHR Logic Power Supply Isolation Switch on panel H12-P617 in NORM position.

_____ / _____
Ind/Ver

_____ (2) CLOSE Relay Logic A and B Control Panel, H12-628, Circuit Breaker at 125/250V DC Distribution Panel 3B Ckt No. 11.

_____ / _____
Ind/Ver

R B.

_____ c. Main Steamline Isolation Valves (MSIVs) can be operated from the RTGB, THEN

_____ (1) PLACE Inboard MSIV AC Power Isolation Switch (keylock) on panel H12-P622 in NORM position.

_____ / _____
Ind/Ver

_____ (2) PLACE Outboard MSIV AC Power Isolation Switch (keylock) on panel H12-P623 in NORM position.

_____ / _____
Ind/Ver

_____ (3) CLOSE Inboard Isolation Valve Logic Control Panel, H12-P622, Circuit Breaker at 125V DC Distribution Panel 3A Ckt 12.

_____ / _____
Ind/Ver

____ (4) CLOSE Outboard Isolation Valve Logic Control Panel, H12-P623, Circuit Breaker at 125V DC Distribution Panel 3B Ckt 12.

_____ / _____
Ind/Ver

_____ d. HPCI operation is NOT required, THEN

____ (1) PLACE HPCI Logic A Switch, B21-S6A on panel H12-P614 in NORMAL position.

_____ / _____
Ind/Ver

_____ (2) PLACE HPCI Logic B Switch, B21-S6B on panel H12-P614 in Normal position.

_____ / _____
Ind/Ver

_____ e. MCC 1XD can be energized from Unit Substation E6, THEN PLACE the circuit breaker control switch in the ON position for Reactor Building MCC 1XD at Unit Substation E8 compartment AW6.

_____ / _____
Ind/Ver

RB.

_____ f. Power is available from MCC 1XD for operation of HPCI Steam Supply Inboard Isolation Valve, 1-E41-F002, THEN

_____ (1) PLACE the circuit breaker control switch in the ON position for HPCI Steam Line Inboard Isolation Valve, 1-E41-F002, at MCC 1XD compartment DW1.

_____ / _____
Ind/Ver

_____ (2) PLACE the circuit breaker control switch in the OFF position for HPCI Steam Supply Line Isolation Valve, 1-E41-F002, (ASSD FEED) at MCC 1XC compartment DS1.

_____ / _____
Ind/Ver

_____ (3) PLACE the ASSD Keylock Control Switch in the OFF position for HPCI Steam Supply Line Isolation Valve, 1-E41-F002, at MCC 1XC compartment DS1.

_____ / _____
Ind/Ver

_____ g. MCC 1XB can be energized from Unit Substation E6, THEN PLACE the circuit breaker control switch in the ON position for MCC 1XB at 480V Unit Substation E6 compartment AW0.

_____ / _____
Ind/Ver

_____ h. Power is available from MCC 1XB for operation of HPCI Turbine Exhaust Vacuum Breaker Valve, 1-E41-F079, THEN

_____ (1) PLACE the circuit breaker control switch in the ON position for HPCI Turbine Exhaust Vacuum Breaker Valve, 1-E41-F079, at MCC 1XB compartment DQ0.

_____ / _____
Ind/Ver

R B.1

_____ (2) PLACE the circuit breaker control switch in the OFF position for HPCI Turbine Vacuum Breaker Valve, 1-E41-F079, (ASSD FEED) at MCC 1XC compartment DT2.

_____ / _____
Ind/Ver

_____ (3) PLACE the ASSD Keylock Control Switch in the OFF position for HPCI Turbine Vacuum Breaker Valve, 1-E41-F079, at MCC 1XC compartment DT2.

_____ / _____
Ind/Ver

_____ i. Suppression Pool Suction Valve, 1-E41-F042 can be operated by normal control, THEN

_____ a. PLACE Valve 1-E41-F024 Interlocks Bypass Switch, E41-SS-5401 keylock switch on panel H12-P601 in NORM position.

_____ / _____
Ind/Ver

_____ b. OBSERVE amber indicating lamp above key lock switch extinguished.

_____ j. Torus Level RIP Valve to 1-CAC-LT-2602, 1-CAC-SV-1219C, can be operated from the RTGB, THEN PLACE keylock Isolation Switch for Valve 1-CAC-SV-1219C, Y9A-IS1, at Junction Box Node Y9A, Reactor Building North Wall El. 20', in NORMAL position.

_____ / _____
Ind/Ver

_____ k. Suppression Pool High Pressure RIP Valve to 1-CAC-LT-2602, 1-CAC-SV-4344, can be operated from the RTGB, THEN PLACE keylock Isolation Switch for Valve 1-CAC-SV-4344, Y9A-IS2, at Junction Box Node Y9A, Reactor Building North Wall El. 20', in NORMAL position.

_____ / _____
Ind/Ver

_____ l. Conventional Service Water Pump 1A Discharge Valves can be operated from normal controls, THEN

_____ (1) PLACE the circuit breaker control switch in the ON position for Conventional Service Water Pump 1A Discharge Valve To Conventional Header, 1-SW-V13, at MCC 2PB compartment E45. RB

_____ / _____
Ind/Ver

_____ (2) PLACE the circuit breaker control switch in the ON position for Conventional Service Water Pump 1A Discharge Valve To Nuclear Header, 1-SW-V14, at MCC 2PB compartment E44.

_____ / _____
Ind/Ver

_____ m. Conventional Service Water Pump 1C Discharge Valves can be operated from normal controls, THEN

_____ (1) PLACE the circuit breaker control switch in the ON position for Conventional Service Water Pump 1C Discharge Valve To Conventional Header, 1-SW-V17, at MCC 1PB compartment BX8

_____ / _____
Ind/Ver

_____ (2) PLACE the circuit breaker control switch in the ON position for Conventional Service Water Pump 1C Discharge To Nuclear Header, 1-SW-V18, at MCC 1PB compartment BX9.

_____ / _____
Ind/Ver

_____ n. RHR Heat Exchanger 1B Service Header Outlet Valve, 1-E11-PDV-F068B can be operated from the RTGB, THEN PLACE the circuit breaker control switch in the ON position for RHR Heat Exchanger 1B Service Header Outlet Valve, 1-E11-PDV-F068B, at MCC 1XB compartment DN1.

_____ / _____
Ind/Ver

_____ o. RHR Service Water Booster Pumps B and D Inboard Isolation Valve, 1-SW-V105, can be operated from the RTGB, THEN PLACE the circuit breaker control switch in the ON position for RHR Service Water Booster Pumps B and D Inboard Isolation Valve 1-SW-V105, at MCC 1XD compartment DM1.

_____ / _____
Ind/Ver

R B.1

_____ p. Service Water to RHR Service Water Cross-tie Valve, 1-SW-V102 can be operated from the RTGB, THEN PLACE the circuit breaker control switch in the ON position for Service Water To RHR Service Water Header Cross-tie Valve, 1-SW-V102, at MCC 1XB compartment DM6.

_____ / _____
Ind/Ver

_____ q. Nuclear Service Water to Vital Header Inboard Isolation Valve, 1-SW-V117 can be operated from the RTGB, THEN PLACE the circuit breaker control switch in the ON position for Nuclear Service Water To Vital Header Inboard Isolation Valve, 1-SW-V117, at MCC 1XB compartment DP2.

_____ / _____
Ind/Ver

_____ r. Nuclear Header to RBCCW Heat Exchangers Isolation Valve, 1-SW-V106 can be operated from the RTGB, THEN PLACE the circuit breaker control switch in the ON position for Nuclear Header To RBCCW Heat Exchangers Isolation Valve, 1-SW-V106, at MCC 1XA compartment D3.

_____/_____
Ind/Ver

_____ s. Power is available from MCC 1XDB for operation of Shutdown Cooling Outboard Suction Isolation Valve, 1-E11-F008, THEN

_____ (1) PLACE the circuit breaker control switch in the ON position for Shutdown Cooling Outboard Suction Isolation Valve, 1-E11-F008, at MCC 1XDB compartment B50.

_____/_____
Ind/Ver

_____ (2) PLACE the circuit breaker control switch in the OFF position for RHR Suction Isolation Valve, 1-E11-F008, (ASSD FEED) at MCC 1XDA compartment B26.

_____/_____
Ind/Ver

RB.1

_____ (3) PLACE the Close/Off/Open Keylock Switch in the OFF position for RHR Suction Isolation Valve, 1-E11-F008, at MCC 1XDA compartment B26.

_____/_____
Ind/Ver

____ 19. WHEN:

_____ a. The fire has been extinguished AND

_____ b. All breakers, AND/OR switches operated in this procedure are restored to their normal position AND

_____ c. No actions within this procedure are required to achieve or maintain Cold Shutdown, THEN

_____ d. EXIT this procedure.

Date/Time Completed _____

Performed By (Print) _____ Initials _____

_____ _____ _____

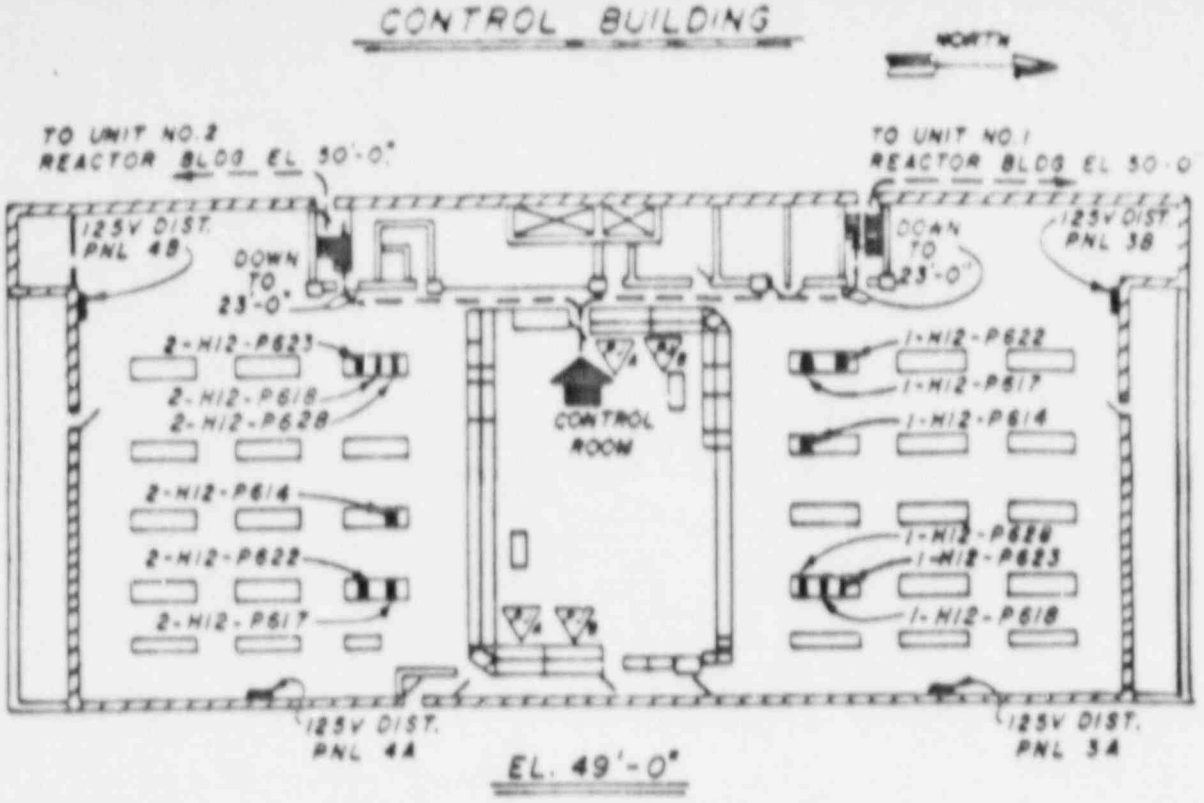
_____ _____

_____ _____

_____ _____

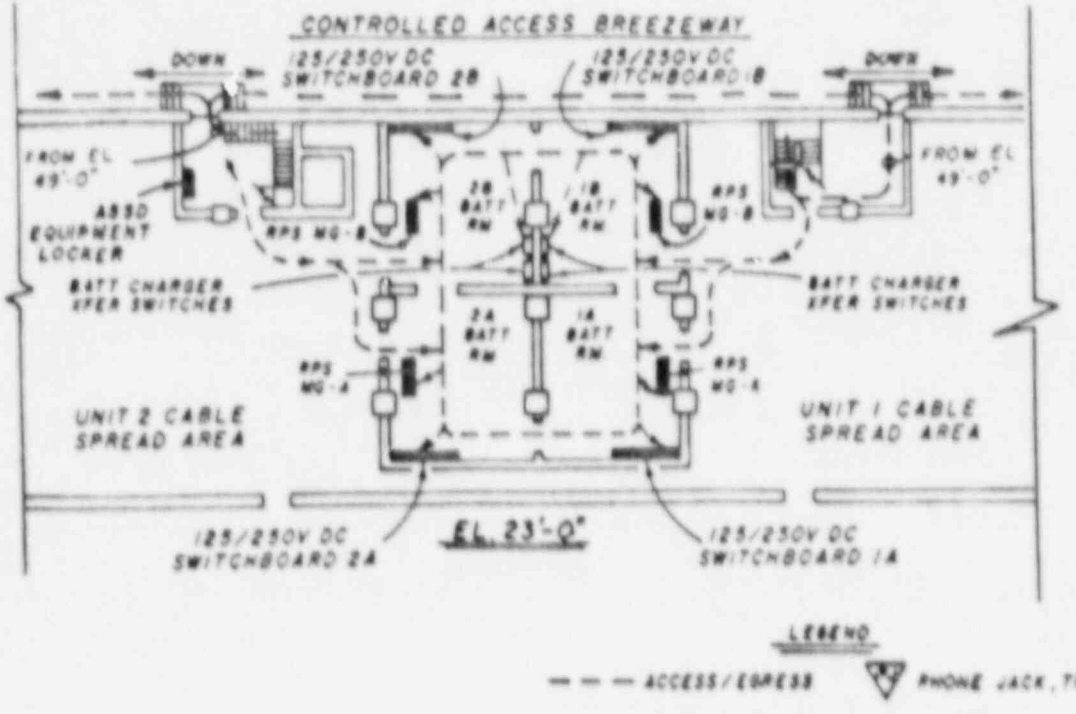
Reviewed By: _____
Shift Foreman

R B.1



TO DIESEL GENERATOR BUILDING, SERVICE WATER BUILDING, REACTOR BUILDING AND THE EAST YARD.

RB



LEGEND

— — — ACCESS/EGRESS

PHONE JACK, TRAIN A OR B

FIGURE 1

Control Building 23'0" and 49'0" Elevations Access/Egress
and
Sound Powered Phone Communications

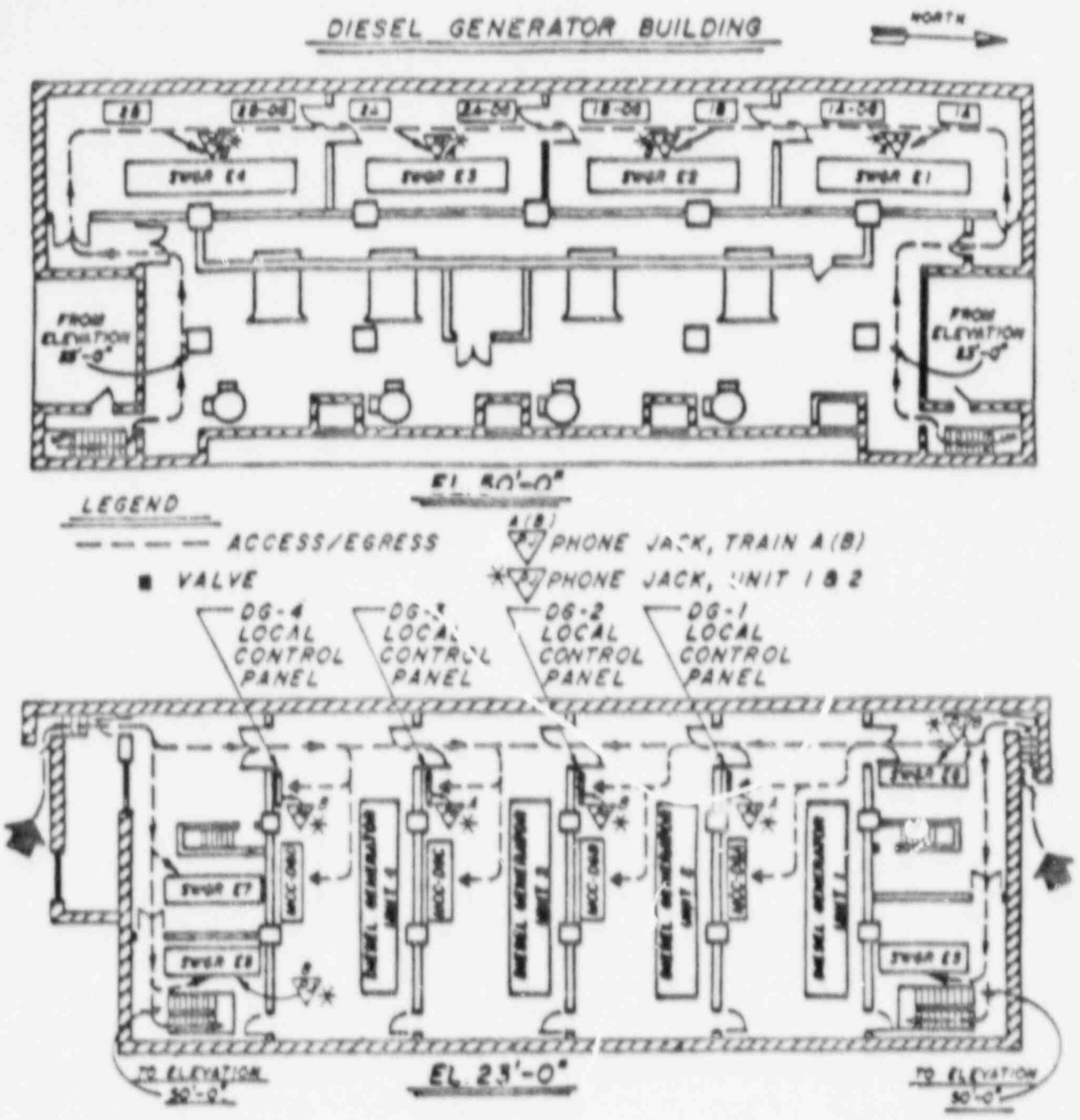
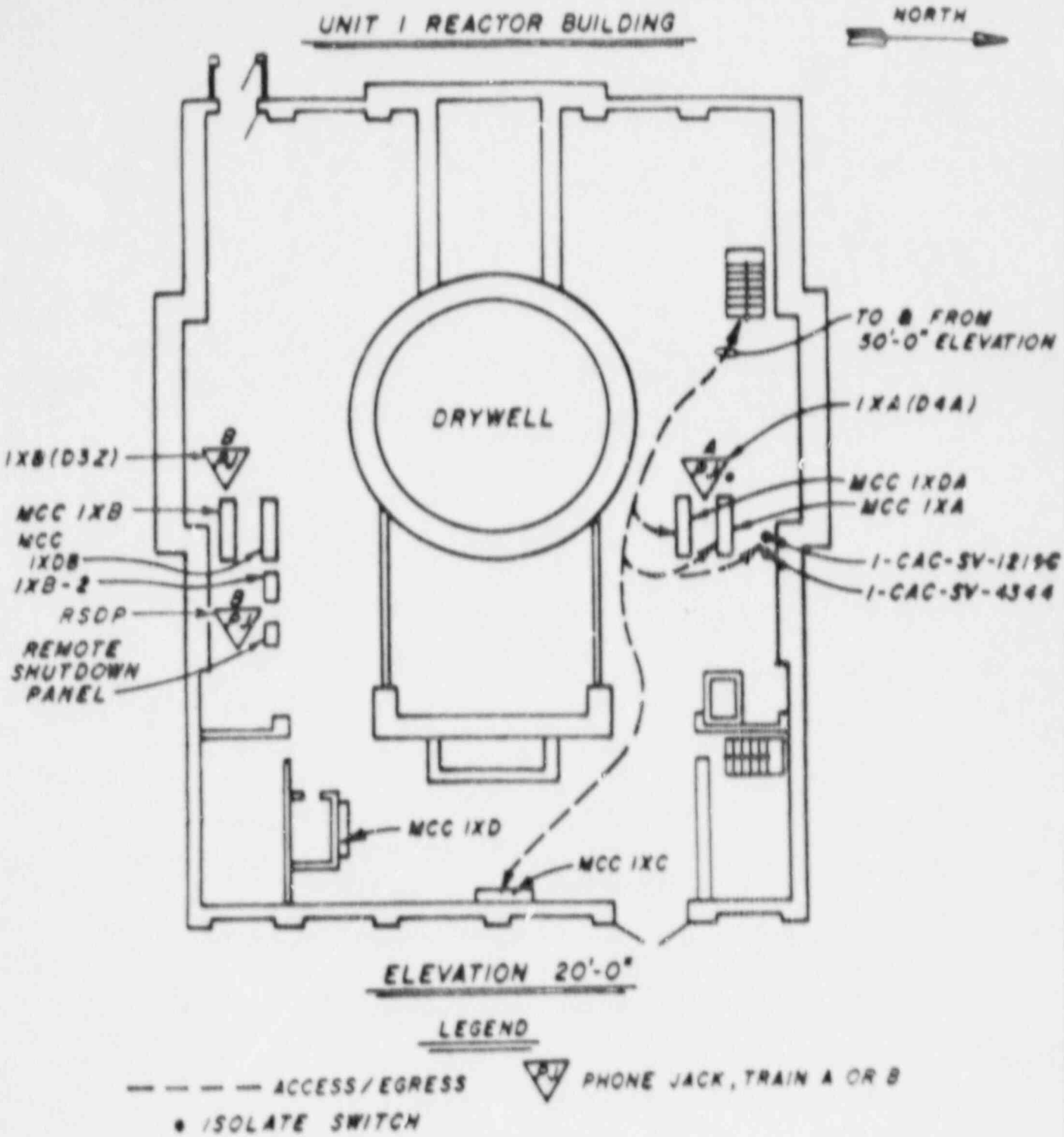


FIGURE 2

Diesel Generator Building 23'-0" and 50'-0" Elevations Access/Egress
and
Sound Powered Phone Communications

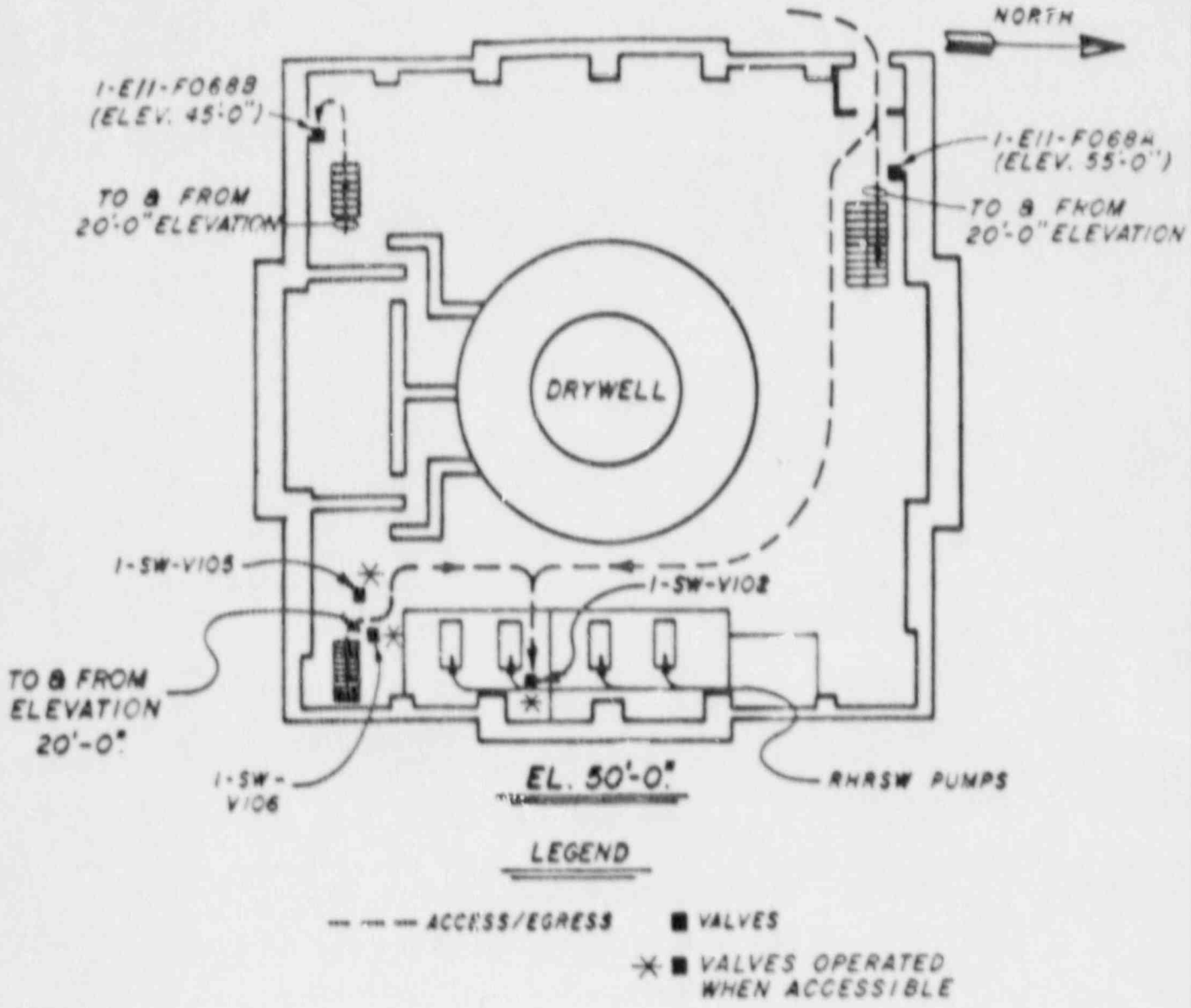
RB.



RB.2

FIGURE 3

Unit 1 Reactor Building 20'0" Elevation Access/Egress
and
Sound Powered Phone Communications



RB.2

FIGURE 4

Unit 1 Reactor Building 50'-0" Elevation Access/Egress

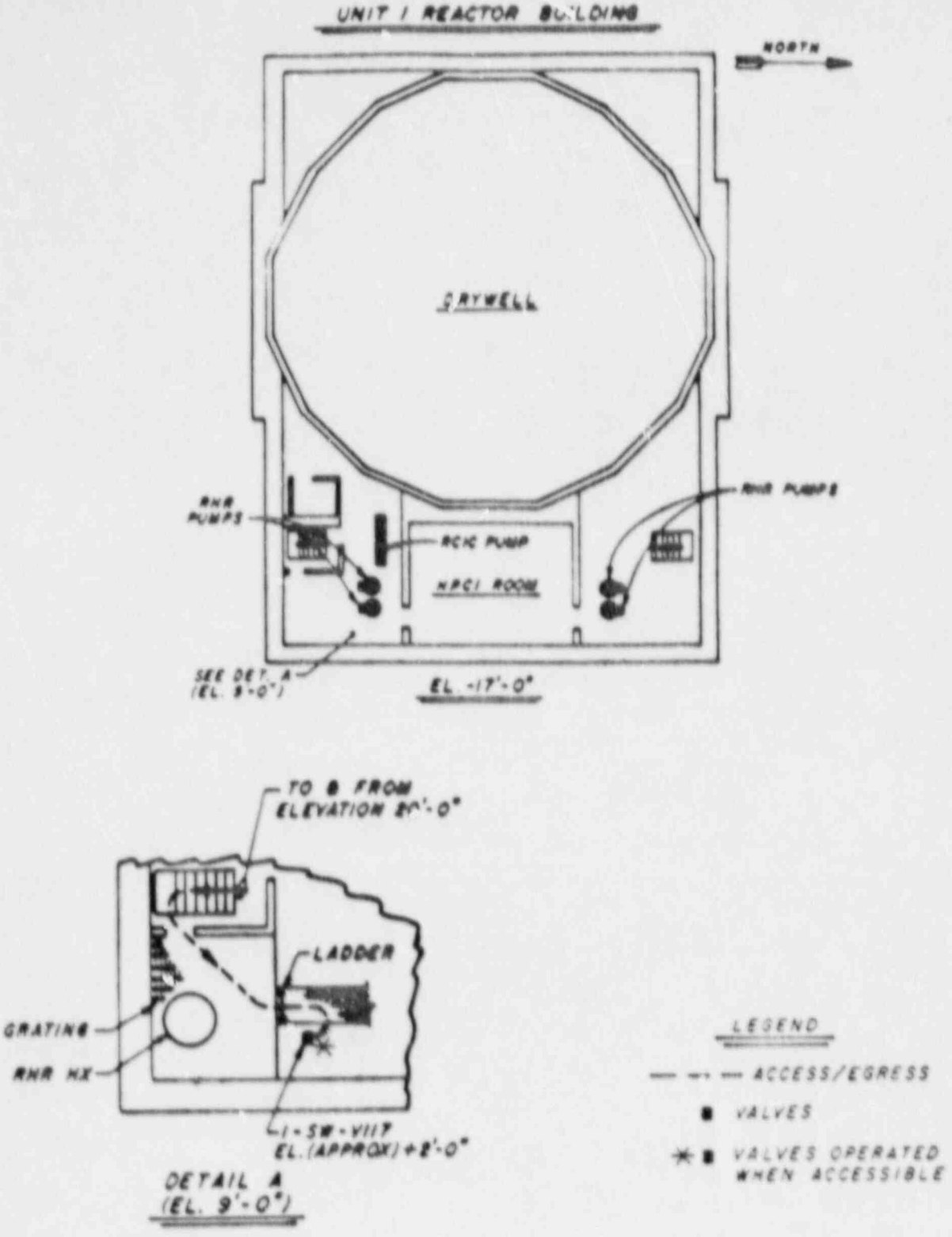


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FIGURE 5

Unit 1 Reactor Building -17'-0" Elevation Access/Egress

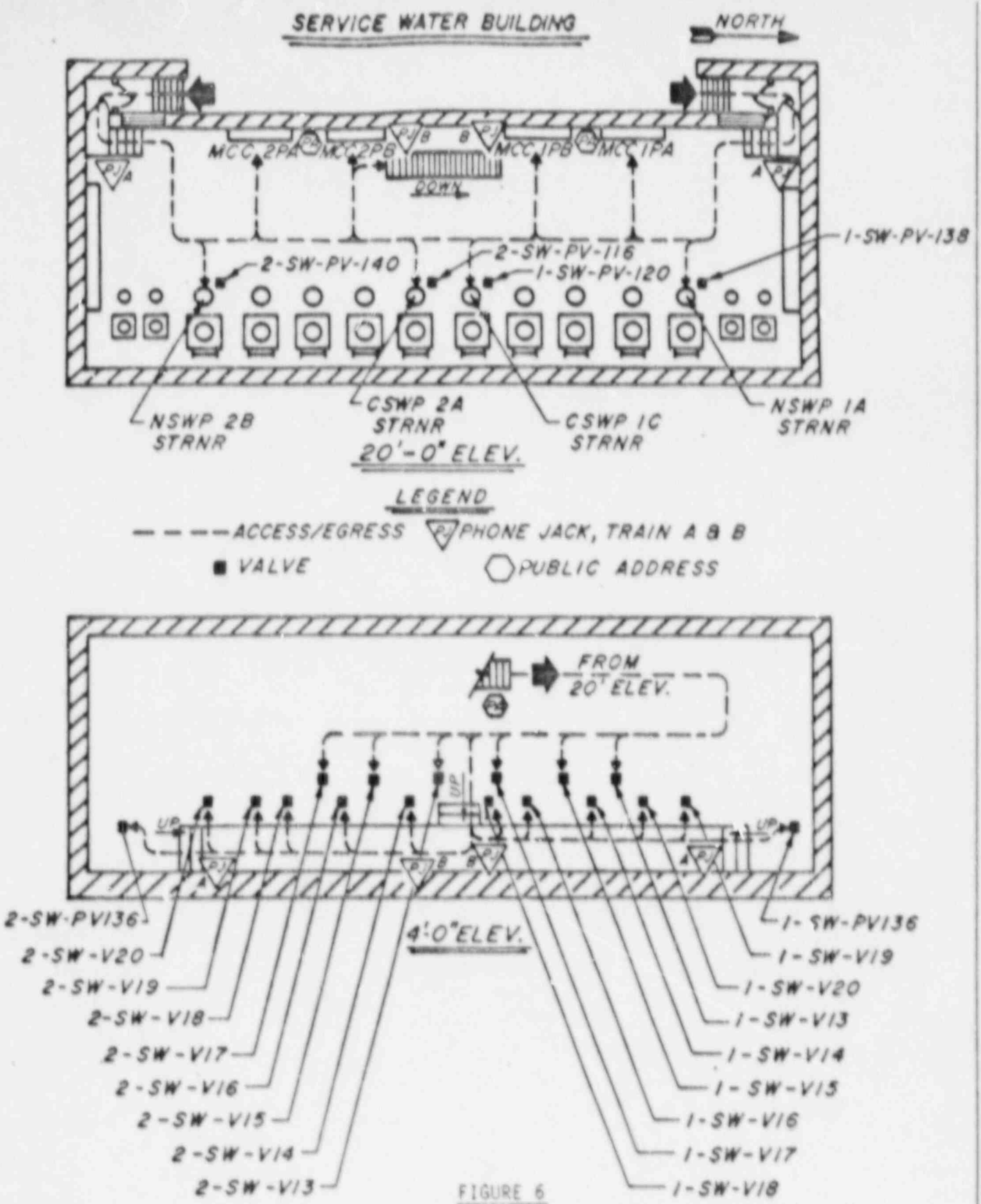
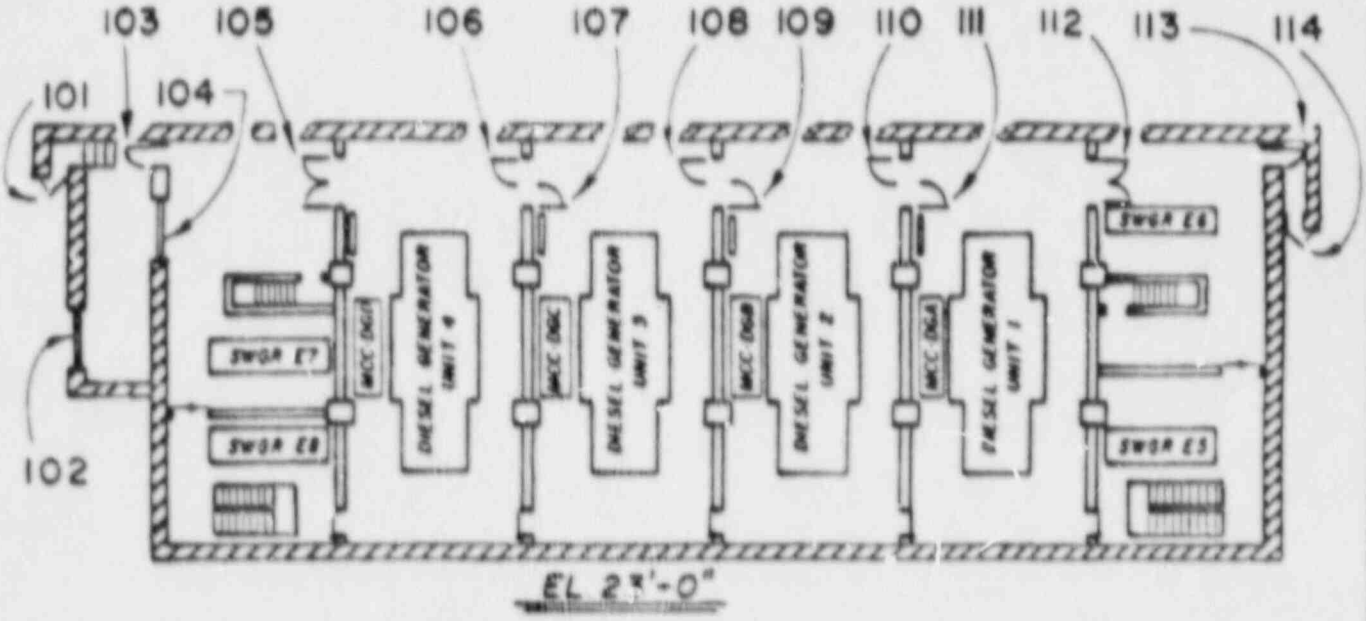


FIGURE 6

Service Water Building 20'0" and 4'0" Elevations Access/Egress
and
Sound Powered Phone Communications

DIESEL GENERATOR VENTILATION

1. OPEN/BLOCK OPEN doors identified on drawing below.
2. BLOCK OPEN doors using door wedge blocks.



K B.2

ATTACHMENT 1

Diesel Generator Building Door Position
For
Diesel Cell Ventilation