

Log # TXX-4478
File # 10010
TEXAS UTILITIES GENERATING COMPANY
SKYWAY TOWER • 400 NORTH OLIVE STREET, L.B. 81 • DALLAS, TEXAS 75201

May 21, 1985

JOHN W. BECK
VICE PRESIDENT

Director of Nuclear Reactor Regulation
Attention: Mr. Vincent S. Noonan, Director
Comanche Peak Project
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOS. 50-445 AND 50-446
RESPONSE FOR REQUEST FOR ADDITIONAL
INFORMATION ON SAFE SHUTDOWN AND
ALTERNATE SHUTDOWN

Dear Mr. Noonan:

Attachment 1 provides the responses to NRC Auxiliary System Branch
Questions 010.32 and 010.33 requested in NRC letter dated March 8, 1985.
These responses will be included in a future amendment to the CPSES FSAR.

Also attached (Attachment 2) are marked up copies of the referenced
sections of the CPSES Fire Protection Program Review (FPPR).

Should you have any questions in this matter please contact this office.

Sincerely,

John W. Beck
J. W. Beck

BSD/grr
Attachments

c - S. B. Burwell
A. L. Vietti

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Q010.32 In the response to 010.26, the applicant identified the following high to low pressure interfaces that require post fire operator actions to prevent overpressurizing the systems:

- a. Pressurizer Power-Operated Relief Valves
- b. Normal Letdown Isolation Valves
- c. Excess Letdown Isolation Valves
- d. Reactor Head and Pressurizer Vent Valves

In order to complete our evaluation, we require a description of the post fire operator actions that include the priority of the operator actions, the number of actions, and the time allowed for each action. In addition, verify that these operator actions are listed in the safe shutdown procedures.

R010.32 CPSES Safe Shutdown systems are designed to preclude spurious operation of high-to-low pressure interface valves. Operator action to prevent these spurious operations is only required for Cable Spreading Room/Control Room fire scenarios and is described below.

Table 4-1.4 of the CPSES Fire Protection Program Review (FPPR) provides a summary of operator actions required at the Hot Shutdown Panel (HSP). To prevent spurious operation of the Train B Pressurizer Power Operated Relief Valve, 1-PCV-456, and the Excess Letdown Isolation Valve, 1-8153, the operator, at the HSP, connects the alternate power supply path to these valves by transferring control to the Hot Shutdown Panel.

Table 4-1.3 of the FPPR provides a summary of operator actions required at the Shutdown Transfer Panel (STP). To

prevent spurious operation of the Train A Pressurizer Power Operated Relief Valve, 1-PCV-455A, and the Normal Letdown Isolation Valves, 1-8149A, 1-8149B and 1-8149C, the operator, at the STP, connects the alternate power supply path to these valves by transferring control to the Hot Shutdown Panel.

Priority of operator actions and the time allowed for each operator action are given in FPPR Figures 4-2 and 4-1, respectively.

FPPR Table 4-1.1 provides a summary of operator actions required at various locations throughout the plant. To prevent spurious operation of the Reactor Head and Pressurizer Vent Valves, 1-HV-3607, 1-HV-3608, 1-HV-3609 and 1-HV-3610 respectively, the operator disconnects DC power at the 125V DC switchboard in the DC Inverter Equipment Room, by turning off the DC input to the respective distribution panels.

FPPR Figure 4-3 indicates the priority of these actions and the time allowed.

All operator actions are listed in detail in CPSES procedure ABN 803A, "Response to a Fire Affecting Control Room or Cable Spreading Room".

CPSSES/FSAR

Q010.33 In order to complete our evaluation, we require the applicant to confirm that acceptable coordination and selective tripping of breaker/fuses is provided for safe shutdown circuits and the ac and dc power systems.

Q010.33 The breaker fuse coordination study is scheduled to be completed by 06/15/85. Proper coordination is being assured by verifying that the protective device for the branch circuit has a lower time-current characteristic than the protective device for the common power supply.

TABLE 4-1.1

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

SUMMARY OF ACTIVITIES FOR AUXILIARY OPERATOR 1

ACTION	COMPONENT	BASIS OF ACTIVITY	REFERENCE SECTION
(1) TRIP REACTOR COOLANT PUMPS AND REMOVE 30A BREAKER CLOSE FUSES AT SWGR 1A1, 1A2, 1A3, 1A4.	1PCPX1, 1PCPX2 1PCPX3, 1PCPX4	(1) PRECLUDE LOSS OF SEAL INTEGRITY.	
(2) LOCALLY START UPS TRAIN A HVAC ROOM COOLER.	LOCAL CONTROL PANEL CPX-VAACUP-1A	(2) MAINTAINS COOLING FOR STATIC INVERTERS AND BATTERY CHARGERS.	
(3) OPERATE SWITCHES TO DISCONNECT DC POWER TO STEAM GENERATOR PORVS, REACTOR VENT ISOLATION VALVES, VOLUME CONTROL TANK VENT ISOLATION VALVES, PRESSURIZER VENT ISOLATION VALVES, SSW PUMP #1 RECIRC VALVE, AND CCP #1 RECIRC VALVE.	@ 1ED1 XED1-1	(3) DISCONNECT POWER TO CAUSE 1PV4252 SSW PUMP #1 RECIRC VALVE TO FAIL IN THE CLOSED (SAFE) POSITION.	2
	1V1EC1	REMOVES DC INPUT TO THE INVERTER. THE INVERTER SUPPLIES POWER TO 1CS-B220 AND THE I/P CONVERTERS THAT CONTROL SG PORVS 1PV2325 AND 1PV2327.	
	1ED1-1	CAUSES RX VESSEL VENT ISOLATION VALVES AND CCP#1 RECIRC VALVE 1FV4536 TO FAIL IN THE CLOSED (SAFE) POSITION. REMOVES POWER FROM SG PORV 1PV2325 AND 1PV2327 LIMIT SWITCHES.	2
	@ 1ED2 1ED2-1	REMOVES POWER FROM SG PORV 1PV2326 AND 1PV2328 LIMIT SWITCHES. CAUSES PRESSURIZER VENT VALVES TO FAIL IN THE CLOSED (SAFE) POSITION.	
	1V1EC2	DEENERGIZES THE DC INPUT TO THE INVERTER. THE INVERTER SUPPLIES POWER TO 1CS-B221 AND THE I/P CONVERTERS THAT CONTROL SG PORVS 1PV2326 AND 1PV2328.	2

TABLE 4-1.1

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

SUMMARY OF ACTIVITIES FOR AUXILIARY OPERATOR 1

ACTION	COMPONENT	BASIS OF ACTIVITY	REFERENCE SECTION
(4) OPEN BREAKERS FOR THE FOLLOWING ON MCC 1EB4-1: o 1-8111 o MOV 1-8812B o TIEC4	SWITCH: MOV 1-8111 MOV 1-8812B TRANSF: TIEC4	(4) DISCONNECT POWER TO ALLOW FOR MANUAL ALIGNMENT CAPABILITY OF 1-8111 CHARGING PUMP MINIFLOW AND 1-8812B RWST TO RHR PUMP 2. TRIPPING TIEC4 AT MCC 1EB4-1 DEENERGIZES AC INPUT TO IV1EC2. THE INVERTER SUPPLIES POWER TO ICS-8221 AND THE I/P CONVERTERS THAT CONTROL SG PORVs 1PV2326 AND 1PV2328.	
(5) AT LOCAL CONTROL PANEL (1CHCICES) START CHILLER PACKAGE	1-HS-6710A	(5) PROVIDES CHILLED WATER TO SAFE SHUTDOWN EQUIPMENT ROOM COOLERS.	
(6) LOCALLY START COMPONENT COOLING WATER PUMP ROOM FAN COLL UNIT	HS-5800B HS-5800C 8	(6) PROVIDES ROOM COOLING TO COMPONENT COOLING WATER PUMP ROOM.	
(7) MANUALLY OPEN: o RWST TO CHARGING PUMP SUCTION VALVE	1-LCV-112D	(7) ALIGNS RWST TO CHARGING PUMP SUCTION FOR SOURCE OF BORATED MAKEUP WATER.	
(8) MANUALLY OPEN: o MINIFLOW CHARGING ISOLATION VALVE	1-8111	(8) PROTECTS THE CENTRIFUGAL CHARGING PUMP DURING LOW FLOW CONDITIONS.	
(9) MANUALLY CLOSE VOLUME CONTROL TANK ISOLATION VALVE LCV112B	1-LCV-112B	(9) PREVENTS LOSS OF NPSH TO SUCTION OF CHARGING PUMPS	
(10) LOCALLY START CHARGING PUMP ROOM FAN COLL UNIT	1-HS-5802B 1-HS-5802C 8	(10) PROVIDES ROOM COOLING TO CHARGING PUMP ROOM	
(11) MANUALLY REGULATE PRESSURIZER LEVEL CONTROL VALVE	1-8483A 1CS8345	(11) TO MAINTAIN PRESSURIZER LEVEL AT APPROXIMATELY 50%	

TABLE 4-1-3

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

SUMMARY OF ACTIVITIES FOR REACTOR OPERATOR 1

ACTION	COMPONENT	BASIS OF ACTIVITY	REFERENCE SECTION
1) TRIP THE REACTOR	SWITCH: CRMT	1) STOP HEAT AND POWER GENERATION	
2) OPERATE THE TRANSFER/ISOLATION SWITCHES TO TRANSFER INDICATION AND SAFE SHUTDOWN COMPONENTS CONTROL TO THE HSP	SHUTDOWN TRANSFER PANEL (STP): CPI ECPRLV-15	2) TRANSFER SAFE SHUTDOWN INSTRUMENT INDICATIONS AND SAFE SHUTDOWN COMPONENT CONTROLS TO HSP	
3) MANUALLY TRIP BREAKERS AND REMOVE JOA BREAKER CLOSE FUSES AT SWITCHGEAR BUS LEA1 FOR: o CONTAINMENT SPRAY PUMP #1 o CONTAINMENT SPRAY PUMP #3 o SAFETY INJECTION PUMP #1	BREAKER: APCS1 APCS3 APSI1	3) PREVENT SPURIOUS OPERATION OF PUMPS, TRAFER PUMP THROTTLE VALVE AND STEAM GENERATOR PORVs.	
MANUALLY TRIP BREAKER AT SWITCHGEAR BUS LEA1 FOR: o POSITIVE DISPLACEMENT CHARGING PUMP	BREAKER: LAPFD1		
TURN-OFF AT MCC 1EB1-1: o AUXILIARY FEEDWATER PUMP TURBINE TRIP AND THROTTLE VALVE o STATIC INVERTER	SWITCH: MOV 1-HV-2452 INVERT	DE-ENERGIZES AC INPUT TO INVERTER. THE INVERTER SUPPLIES POWER TO JCS 8230 AND THE 1/P CONVERTERS THAT CONTROL THE PORVs 1P0325 AND 1P0337	
4) TURN-OFF AT MCC 1EB3-2: o SUMP TO TRAIN A RHR PUMP ISOLATION VALVE	SWITCH: MOV 1-HV-8611A	4) PREVENTS LOSS OF REACTOR COOL BY WATER	
5) TRANSFER CONTROL AND START ELECTRICAL AREA FANS:	TRANSFER SWITCH:	5) PROVIDE COOLING TO ELECTRICAL EQUIPMENT AREA	

TABLE 4-1.3 (CONTINUED)

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

SUMMARY OF ACTIVITIES FOR REACTOR OPERATOR 1

ACTION	COMPONENT	BASIS OF ACTIVITY	REFERENCE SECTION
<ul style="list-style-type: none"> o CONTROLLER 1-LCS-5684A o CONTROLLER 1-LCS-5684B 	1-HS-5684A2 1-HS-5684B2 START SWITCH: 1-HS-5684A3 1-HS-5684B3		
(6) TURN-OFF AT MCC 1EB ² 1: <ul style="list-style-type: none"> o STEAM GENERATOR LOOP #1 ISOLATION VALVE o STEAM GENERATOR LOOP #2 ISOLATION VALVE o STATIC INVERTER 	SWITCH: MOV 1-HV-2491B MOV 1-HV-2492B IV1EC2	(6) DISCONNECT POWER TO ALLOW FOR MANUAL ALIGNMENT CAPABILITY OF AFW TO SG ISOLATION VALVES. DEENERGIZES AC INPUT TO INVERTER. THE INVERTER SUPPLIES POWER TO 1CS-822 AND THE I/P CONVERTERS THAT CONTROL SG PORVS 1PV2326 AND 1PV2328.	
(7) MANUALLY OPEN: <ul style="list-style-type: none"> o 1/SG MDAFWP SUPPLY LINE CUTOUT 1AF-076 o 2/SG MDAFWP SUPPLY ISOLATION 1AF-084 	VALVE: 1-HV-2491B 1-HV-2492B	(7) ESTABLISH AUXILIARY FEEDWATER FLOW PATH TO STEAM GENERATOR 1 OR 2.	
(8) ALIGN 6.9KV SWITCHGEAR BUS 1EA2 BY: <ul style="list-style-type: none"> o VERIFY INCOMING BREAKER (START-UP 345KV) TRIPPED o VERIFY INCOMING BREAKER (BUS 1A2) TRIPPED o MANUALLY TRIP DG FEEDWATER BREAKER AND REMOVE 30A BREAKER CLOSE BUSES 	CABINET 1EA2-1 1EA2-2 1EG2	(8) ELIMINATES ALL COMPONENTS POWERED BY TRAIN B FROM SPURIOUSLY OPER- ATING INCLUDING 1-B100, 1-B801B, 1-B351A, 1-B351B, 1-B351C, 1-B351D.	
(9) MANUALLY CLOSE HI HEAD SAFETY INJECTION VALVE	VALVE: 1-B801B	(9) PREVENT UNCONTROLLED RCS MAKE-UP CAPABILITY.	

TABLE 4-1.4

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

SUMMARY OF ACTIVITIES FOR REACTOR OPERATOR 2

ACTION	COMPONENT	BASIS OF ACTIVITY	REFERENCE SECTION
(1) TRIP THE REACTOR	SWITCH: CRMRT	(1) STOP HEAT AND POWER GENERATION.	
(2) OPERATE SWITCHES AT THE HSP TO ENSURE MSIVS CLOSED, S.G. PORVS CLOSED, PRESSURIZER PORVS CLOSED, AND LETDOWN ISOLATED	HOT SHUTDOWN PANEL (HSP): CP1-ECPRLV-01	(2) PRECLUDE: LOSS OF RCS INVENTORY, UNCONTROLLED COOLDOWN, PRESSURE REDUCTION.	
(3) SUBSEQUENT TO DIESEL GENERATOR "A" START CLOSE DIESEL GENERATOR "A" OUTPUT BREAKER AT THE HSP	DIESEL GENERATOR "A" OUTPUT BREAKER	(3) PROVIDE EMERGENCY POWER TO EMERGENCY SAFEGUARD BUSES.	
(4) START STATION SERVICE WATER PUMP #1	TRAIN "A" HSP SWITCH: 1-HS-4250C	(4) ESTABLISH COOLING TO DIESEL GENERATOR, CENTRIFUGAL CHARGING PUMP LUBE OIL COOLER AND COMPONENT COOLING WATER HEAT EXCHANGER.	
(5) START MDAPW PUMP #1	TRAIN "A" HSP SWITCH: 1-HS-2450C	(5) ESTABLISH AUXILIARY FEEDWATER FLOW TO STEAM GENERATORS.	
(6) MANIPULATE AUXILIARY FEEDWATER ISOLATION VALVES 1-PV2453A OR 1-PV2453B TO CONTROL STEAM GENERATOR INVENTORY	TRAIN "A" HSP CONTROL: 1-FK-2453C 1-FK-2453D	(6) MAINTAIN STEAM GENERATOR INVENTORY.	
(7) START SAFETY CHILLED WATER RECIRCULATION PUMP #5	TRAIN "A" HSP SWITCH: 1-HS-6700FL	(7) ESTABLISHED COOLING WATER TO PUMP AND ELECTRICAL AREA ROOM FANS.	
(8) START COMPONENT COOLING WATER PUMP #1	TRAIN "A" HSP SWITCH: 1-HS-4518C	(8) ESTABLISH COMPONENT COOLING WATER TO SEAL WATER HEAT EXCHANGER, UPS A/C AND SAFETY CHILLED WATER CONDENSERS.	
(9) START CENTRIFUGAL CHARGING PUMP #1 TO ESTABLISH CHARGING FLOW	TRAIN "A" HSP SWITCH: 1/1-APCH1	(9) ESTABLISH PRIMARY INVENTORY CONTROL.	

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

Main Control Room & Cable Spreading Room Fire Scenario

Reactor Operator No. 1

(Time In Minutes)

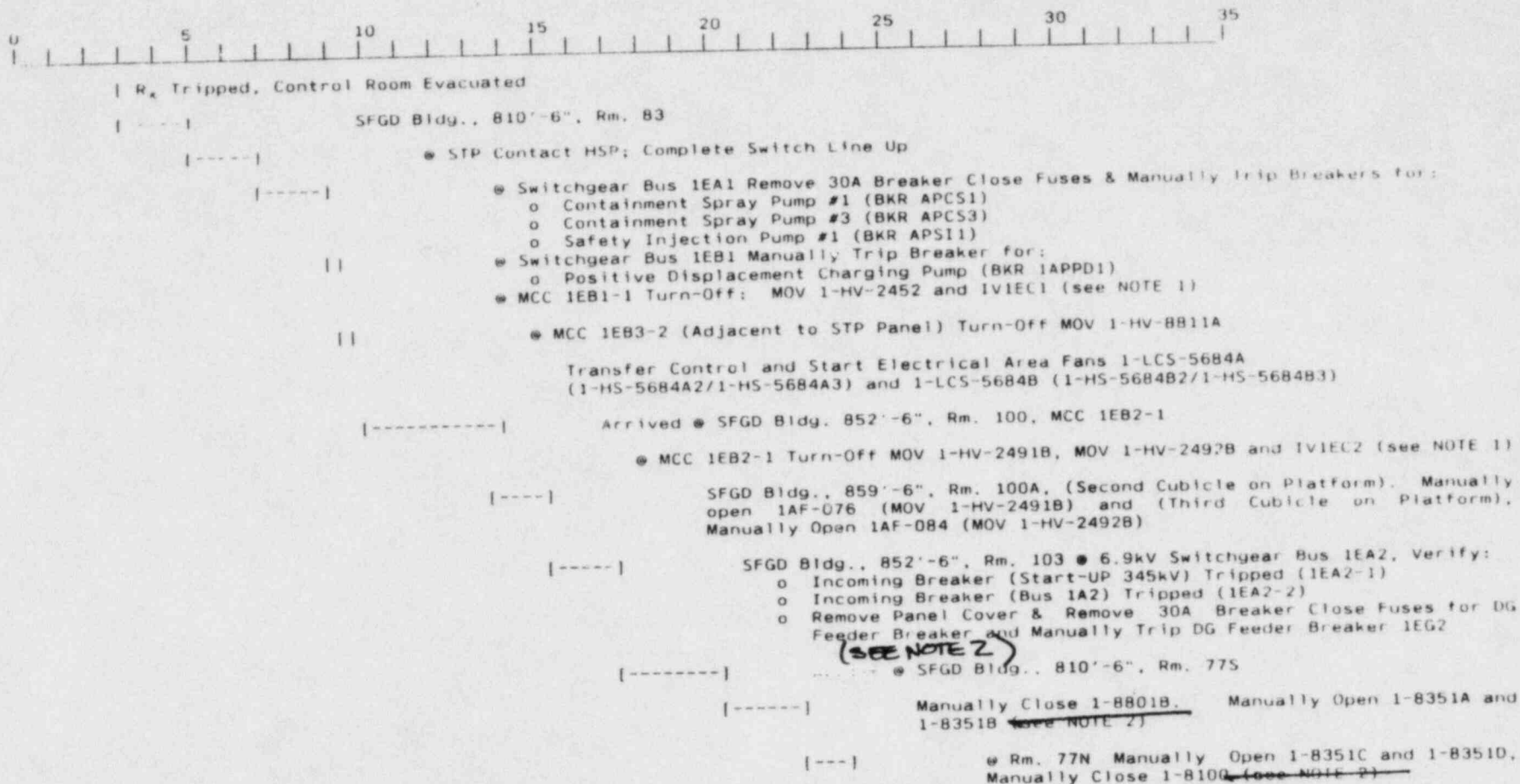


FIGURE 4-1

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

Main Control Room & Cable Spreading Room Fire Scenario

Reactor Operator No. 1

NOTE 1: ~~The following valves will be deenergized at the specified MCC:~~

IVIE1

~~1EB1-1~~
Tripping IVIE1 @ MCC 1EB1-1 deenergizes the AC input to the inverter. The inverter supplies power to ICS-8220 & the I/P converters that control SG PORVs 1PV2325 & 1PV2327.

IVIE2

~~1EB2-1~~
Tripping IVIE2 @ MCC 1EB2-1 deenergizes the AC input to the inverter. The inverter supplies power to ICS-8221 and the I/P converters that control SG PORVs 1PV2326 & 1PV2328.

2

NOTE 2: The following valves will be deenergized when power is removed from 6.9kV switchgear bus 1EA2:

1-8351A
1-8351B
1-8351C
1-8351D

1-8100
1-8801B (?)

FIGURE 4-1
(continued)

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

Main Control Room & Cable Spreading Room Fire Scenario

Reactor Operator No. 2

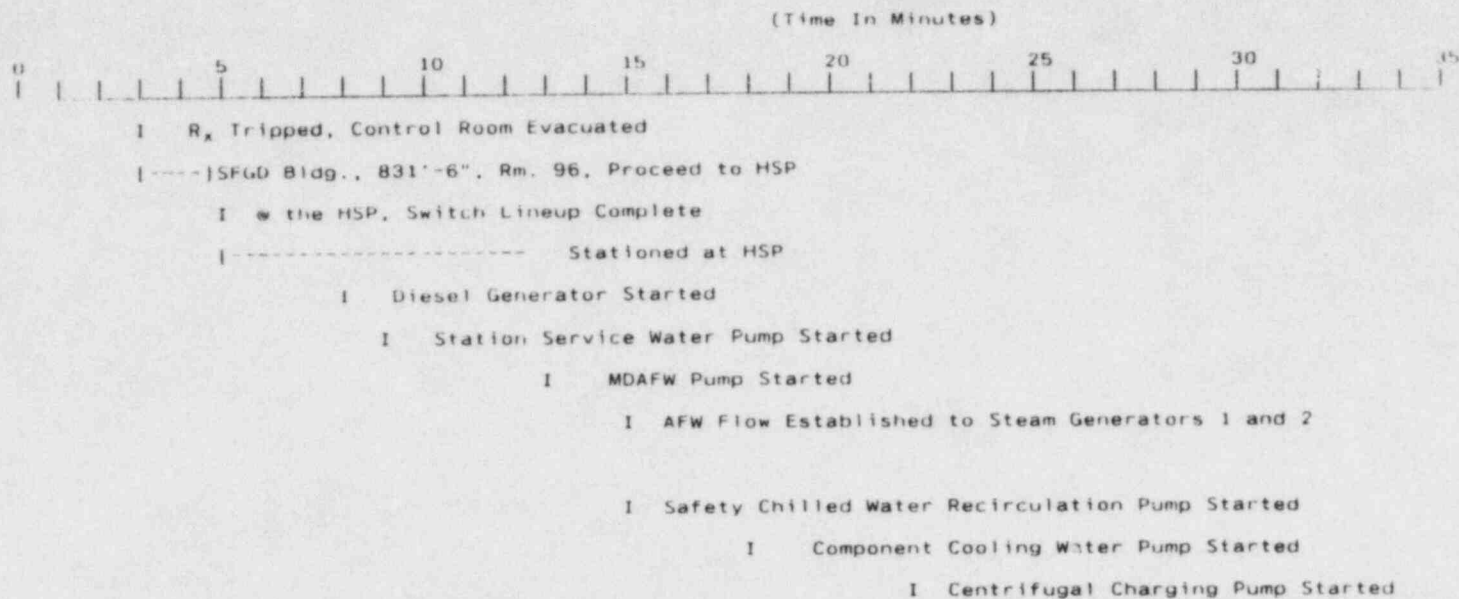


FIGURE 4-2

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

Main Control Room & Cable Spreading Room Fire Scenario

Auxiliary Operator No. 1

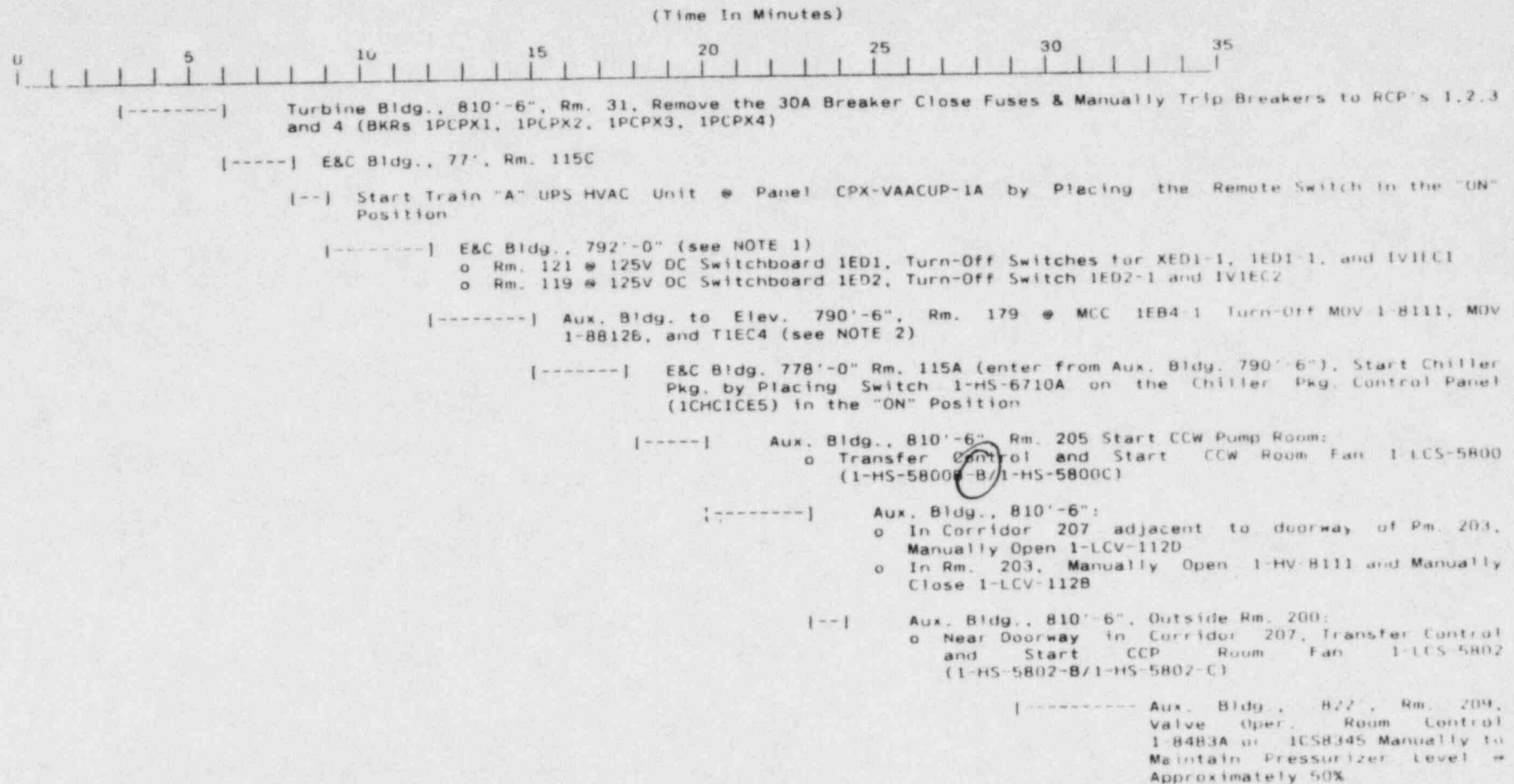


FIGURE 4-3

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION

Main Control Room & Cable Spreading Room Fire Scenario

Auxiliary Operator No. 1

NOTE 1: The following valves will be deenergized by turning off the specified switch at the corresponding 125V dc switchboard:

@ 1ED1
1ED1-1
1HV3607
1HV3608
1PV4536
1PV2325 (deenergizes power to
1PV2327 limit switches)

1ED1 1
1PV4252

1V1EC1
Deenergizes the DC input to the inverter. The
inverter supplies power to 1CS-8220 and the I/P
converters that control SG PORVs 1PV2325 and 1PV2327.

@ 1ED2
1ED2-1
1PV2326 (deenergizes power
1PV2328 to limit switches)
1HV3609
1HV3610

1V1EC2
Deenergizes the DC input to the inverter. The
inverter supplies power to 1CS-8221 and the I/P
converters that control SG PORVs 1PV2326 and 1PV2328.

NOTE 2: Tripping T1EC4 @ MCC 1EB4-1 deenergizes the AC input to 1V1EC2. The inverter supplies power to 1CS-8221 and the I/P
converters that control SG PORVs 1PV2326 and 1PV2328.

FIGURE 4-3
(continued)