

HYDROGEN INNER-COOLED TURBINE GENERATOR

LEGEND

- PRESSURE SWITCH
- PRESSURE GAUGE
- VALVE NORMALLY CLOSED
- VALVE NORMALLY OPEN
- RELIEF VALVE
- TWO WAY VALVE
- ELECTRICAL CONNECTION
- PRESSURE REGULATOR

GAS ALARMS

- HYDROGEN PURITY - HIGH OR LOW
- HYDROGEN PRESSURE - HIGH OR LOW
- HYDROGEN SUPPLY PRESSURE - LOW
- WATER DETECTOR - HIGH
- HYDROGEN TEMPERATURE - HIGH

CONDENSED OPERATING INSTRUCTIONS

GENERAL

- 1 THE GAS CHANGING OPERATION MAY BE PERFORMED WITH THE GENERATOR AT STANDSTILL, ON TURNING GEAR, OR ROLLING AT SPEED NOT EXCEEDING 1000 RPM.
- 2 SHAFT SEAL OIL PRESSURE MUST BE MAINTAINED
- 3 THE NORMAL SETTING OF VALVES IS INDICATED ON THE DIAGRAM

REPLACING AIR AND CO₂

- 1 DISCONNECT THE REMOVABLE LINKS "A" & "H". DISCONNECT REMOVABLE LINK "J" ON WATER DIAGRAM.
- 2 CLOSE VALVES 1, 3, 8, 50, & 78. OPEN VALVES 2, 4, 5, 7, 60 & 70.
- USING CYLINDERS:
 - 3 ADMIT CO₂ BY OPENING BOTTLE VALVES 63 TO 66. OPEN VALVES WIDE AND DO NOT THROTTLE. OBSERVE CO₂ RELIEF VALVE OR PRESSURE GAUGE TO DETERMINE THE NUMBER OF BOTTLES THAT MAY BE OPENED. BOTTLES ARE EMPTY WHEN FROST DISAPPEARS FROM THE FLEXIBLE LEADERS. ONE AND ONE-HALF VOLUMES OF CO₂ ARE REQUIRED. STANDARD CO₂ BOTTLES CONTAIN 440 CUBIC FEET. PURITY SHOULD READ 95% GREATER IN CO₂.
 - USING BULK SUPPLY:
 - 4 BULK CO₂ SUPPLY MAY BE USED FOR PURGING. CLOSE VALVE 60. OPEN VALVES 69 & 70. ADMIT CO₂ PER SAME INSTRUCTIONS AS FOR CYLINDERS.
 - 5 WHEN FINISHED, CHANGE FOLLOWING VALVES BACK TO NORMAL. CLOSE VALVES 2, 4, 5, 7, 60 AND 70. OPEN VALVES 1 AND 3.

REPLACING CO₂ WITH H₂

- 1 REPLACE REMOVABLE LINK "A" AND OPEN VALVES 6, 8, & 50.
- USING CYLINDERS:
 - 2 OPEN VALVES 81, 83, 84, 87 AND 88. OPEN PRESSURE REGULATOR "G" AT BOTTLES. HYDROGEN MAY THEN BE FED BY ADJUSTING PRESSURE REGULATOR "G" AT HYDROGEN PRESSURE CONTROL. FOR MORE RAPID PURGING OPEN VALVE 52. WHEN BOTTLE PRESSURE AT THE HYDROGEN BOTTLE PRESSURE GAUGE DROPS TO 200 PSIG. CLOSE VALVES 83, 84, 87 AND 88. OPEN VALVES 85, 86, 89 AND 90 AND CONTINUE. TWO AND ONE-HALF VOLUMES OF H₂ ARE REQUIRED TO REPLACE CO₂ IN THE GENERATOR AT ONE-HALF PSIG. ONE ADDITIONAL VOLUME IS REQUIRED FOR EACH 15 PSIG INCREASE IN PRESSURE. STANDARD H₂ BOTTLES CONTAIN 190 CUBIC FEET. PURITY METER SHOULD READ 95% GREATER IN H₂.
 - USING BULK SUPPLY:
 - 3 BULK H₂ SUPPLY MAY BE USED FOR PURGING AND FILLING. CLOSE VALVE 81 AND OPEN VALVE 79. ADMIT H₂ PER SAME INSTRUCTIONS AS FOR CYLINDERS.
 - 4 OPEN VALVE 24 FOR APPROXIMATELY TWO MINUTES TO PURGE LOW AREAS, THEN CLOSE VALVE 24.
 - 5 MAINTAIN DESIRED PRESSURE IN GENERATOR BY MEANS OF THE PRESSURE REGULATOR "G" AT THE HYDROGEN PRESSURE CONTROL.
 - 6 OPERATION IS THEN NORMAL AS INDICATED ON DIAGRAM.
 - 7 OPEN VALVE 78 PER INSTRUCTIONS ON WATER DIAGRAM.
 - 8 INSTALL REMOVABLE LINK "H" PER WATER DIAGRAM.

NORMAL H₂ OPERATION

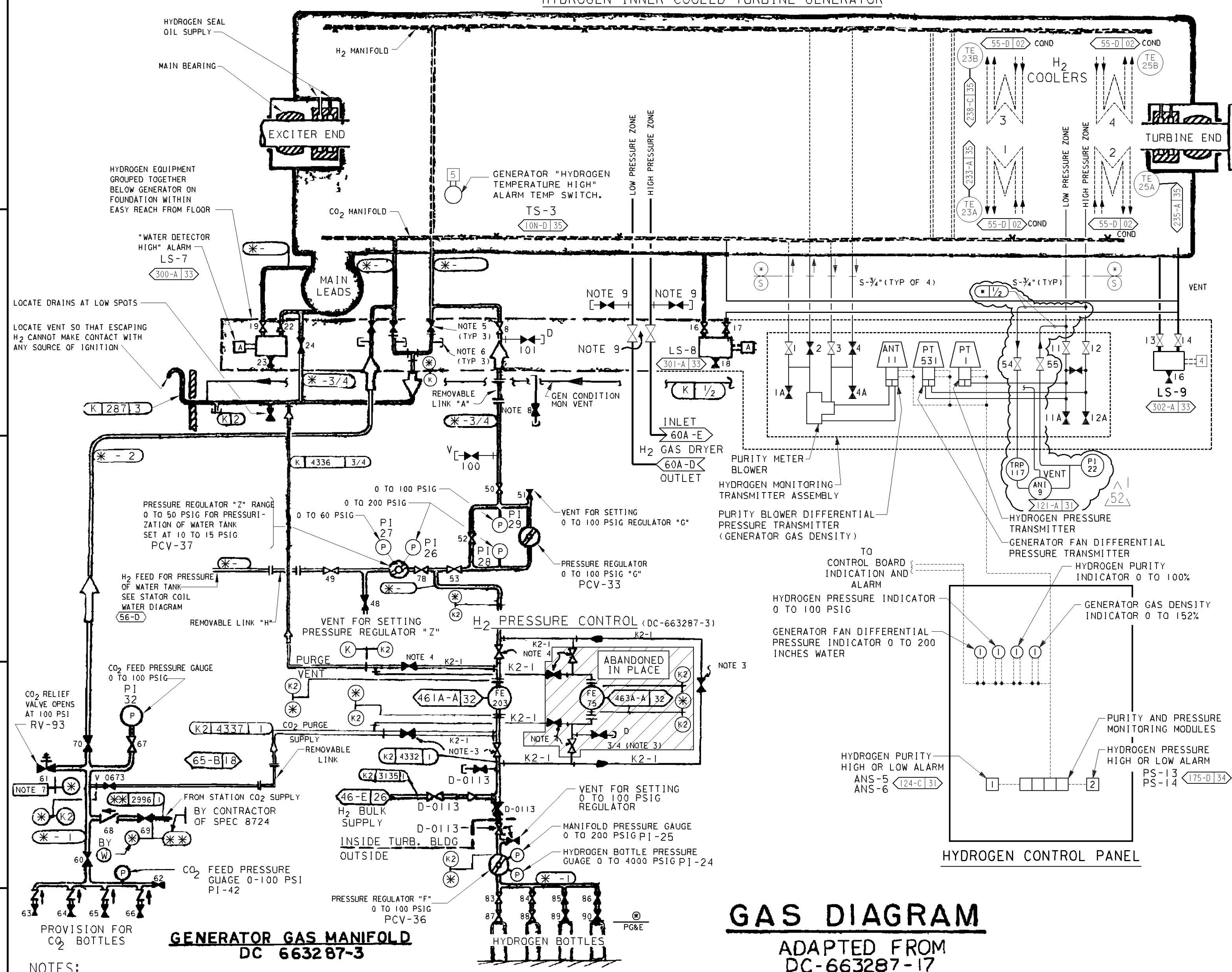
- 1 SET PRESSURE REGULATOR "G" ON THE HYDROGEN PRESSURE CONTROL TO MAINTAIN THE DESIRED HYDROGEN PRESSURE IN THE GENERATOR. THE PRESSURE MAY BE VARIED TO 75 PSIG.

REPLACING H₂ WITH CO₂

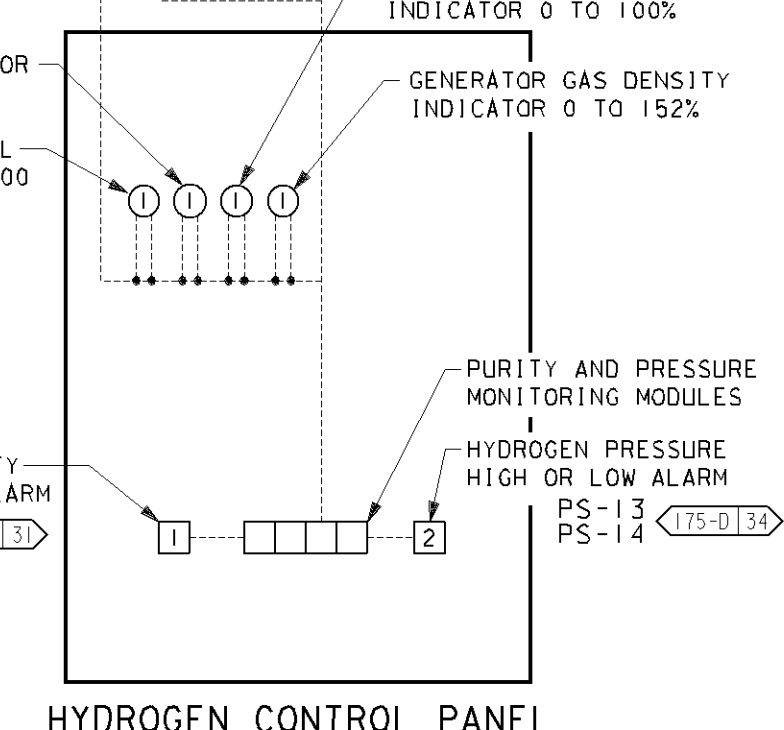
- 1 CLOSE VALVES 8, 50, 53 & 78. OPEN VALVE 7 AND VENT HYDROGEN PRESSURE.
- 2 DISCONNECT REMOVABLE "LINK A".
- 3 THIS OPERATION IS THE SAME AS REPLACING AIR WITH CO₂ EXCEPT THAT TWO VOLUMES OF CO₂ ARE REQUIRED.

PRESSURIZATION OF STATOR COIL WATER SYSTEM

FOR PRESSURIZATION OF THE STATOR COIL WATER SYSTEM, SEE STATOR COIL WATER DIAGRAM.



GAS DIAGRAM
ADAPTED FROM
DC-663287-17



- NOTES:
1. ALL PIPING ON THIS SHEET PG&E CLASS E.
 2. FOR PRESSURE MEASURING STATION CONFIGURATION REFER TO DC-663287-15.
 3. GRINNEL DIAPH. VALVE MODEL 2472-10-M, CS, SW.
 4. 1" GRINNEL DIAPH. VALVE MODEL 2472-2-M, CS, SW.
 5. KEROTEST 2" GLOBE VALVE CS, SW MODEL 9910S.
 6. PLUGGED THREADOLETS, 1/2" 3000# LOCATED LESS THAN 6" BELOW VALVES FOR LEAK CHECK.
 7. "AQUATROL" 1" BRONZE VALVE (MODEL 89) SET TO OPEN AT 100 PSIG.
 8. KEROTEST PACKLESS GLOBE VALVE MODEL #R42C06 SW.
 9. 3/4" #0 SS PACKLESS METAL DIAPHRAGM GLOBE VALVE 300# SW ENDS, KEROTEST MODEL R42U06 SW.
 10. KEROTEST PACKLESS GLOBE VALVES MODEL R42X24 WC.

UNIT 1

DIABLO CANYON POWER PLANT - PG&E CO.			
TURBINE AND GENERATOR ASSOCIATED SYSTEMS			
DRAWING	SHEET	PAGE	REV
102022	6	0	52

RASTER=102022.s6.dgn
 DGN=102022.s6.dgn
 CAD User: ZNS4 Date: 01-03-2017

INPGIC	01-03-2017	ZNS4	Fxc2	N/A	NOT REQUIRED PER CF3.ID5	-	-	-	REVISED PER DFT-7*3941
1 Size	DATE	DWN	RE	IV	PROFESSIONAL ENGINEER	PE DISC.	PE#	PE EXP.	