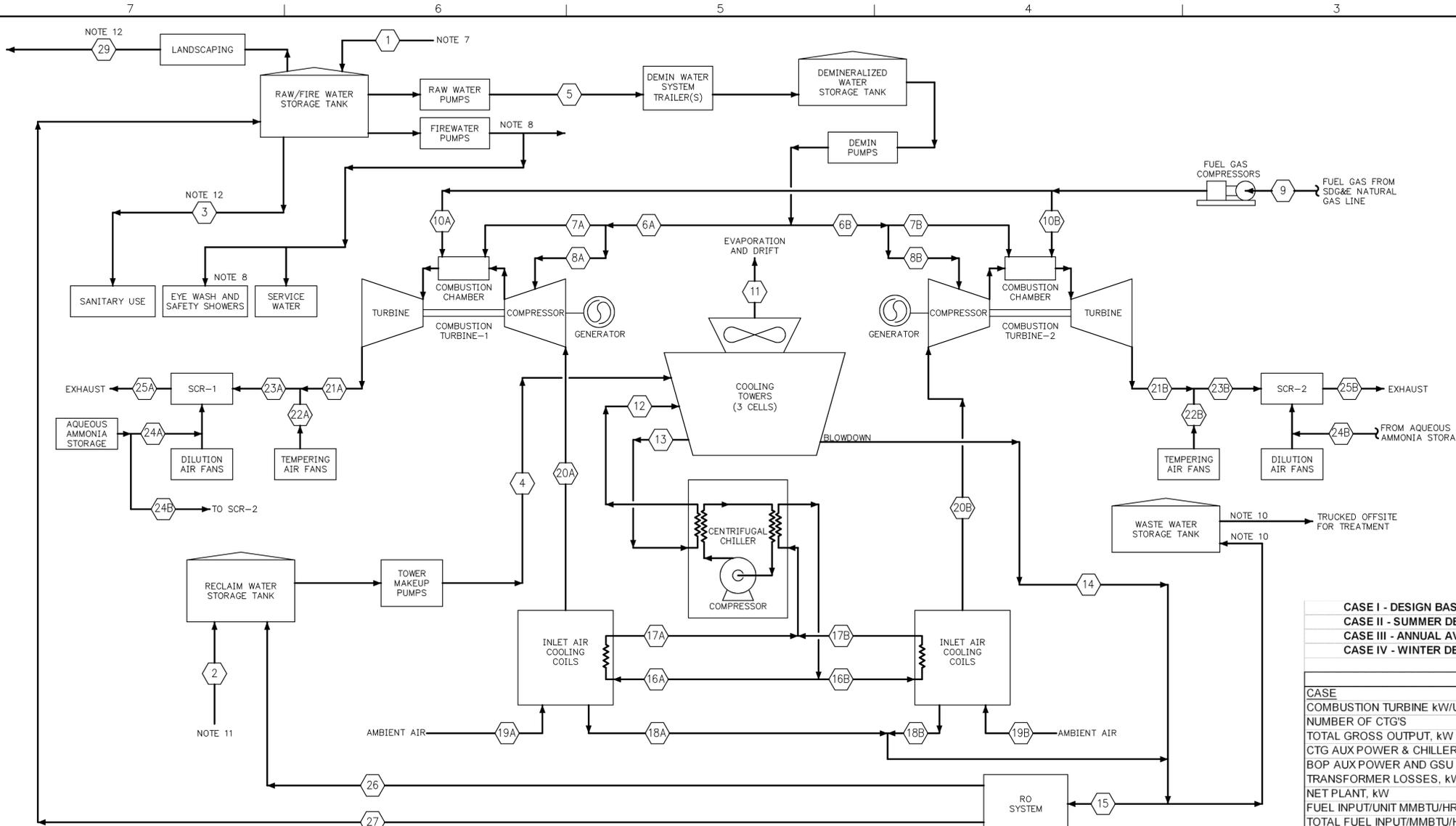


APPENDIX 2-C – PROCESS FLOW DIAGRAM



- NOTES:**
- FUEL GAS LHV = 915 BTU/SCF.
 - THE VALUES LISTED ON THIS DRAWING ARE BASED ON LM 6000 SPRINT COMBUSTION TURBINES FIRING NATURAL GAS.
 - ELEVATION = 420 FT. ABOVE MEAN SEA LEVEL.
 - COOLING TOWER BLOWDOWN BASED ON 4 CYCLES OF CONCENTRATION.
 - EMISSIONS ARE GUARANTEED VALUES FOR COOLING TOWERS AT BASE LOAD OPERATION.
 - AUXILIARY LOADS ARE PRELIMINARY.
 - WATER SUPPLY IS TRUCKED IN FROM FALL BROOK PLANT FRESH WATER TIE-IN STATION.
 - FLOW FOR FIREWATER PUMPS AND FOR EYE WASH AND SAFETY SHOWERS IS TYPICALLY ZERO.
 - BOP AUX POWER LOADS:
 A) TRANSFORMER LOSSES = 505 Kw
 B) GAS COMPRESSORS = 2 x 600 HP
 C) DEMIN PUMP = 2 x 7.5 HP
 D) AIR COMPRESSOR = 40 HP
 E) AREA LIGHTING, HVAC AND MISC LOADS = 115 Kw
 TOTAL = 1,555 Kw
 - FLOW TO AND FROM THE WASTE WATER STORAGE TANK IS TYPICALLY ZERO.
 - WATER SUPPLY IS TRUCKED IN FROM FALLBROOK PLANT.
 - INTERMITTENT FLOW BUT SHOWN AS AN INSTANTANEOUS RATE.

CASE I - DESIGN BASIS:	86 F (DBT),	70.5 F (WBT),	47% RH
CASE II - SUMMER DESIGN:	102 F (DBT),	70.5 F (WBT),	21% RH
CASE III - ANNUAL AVERAGE:	65 F (DBT),	59.9 F (WBT),	75% RH
CASE IV - WINTER DESIGN:	27 F (DBT),	22.4 F (WBT),	50% RH

PERFORMANCE SUMMARY				
CASE	I	II	III	IV
COMBUSTION TURBINE KW/UNIT	50,428	50,428	50,409	49,389
NUMBER OF CTG'S	2	2	2	2
TOTAL GROSS OUTPUT, KW	100,856	100,856	100,818	98,778
CTG AUX POWER & CHILLER, KW	3,415	3,420	2,115	955
BOP AUX POWER AND GSSU				
TRANSFORMER LOSSES, KW	1,555	1,555	1,555	1,555
NET PLANT, KW	95,886	95,881	97,148	96,268
FUEL INPUT/UNIT MMBTU/HR (LHV)	430.1	430.1	430.1	418.5
TOTAL FUEL INPUT/MMBTU/HR (LHV)	860.2	860.2	860.2	837.0
NET PLANT HEAT RATE				
BTU/KWH (LHV)	8,971	8,972	8,855	8,694
BTU/KWH (HHV)	9,958	9,958	9,829	9,651

STREAM NO.	1				2				3				4				5				6 A/B				7 A/B			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
CASE	61,176	62,729	64,110	61,237	33,030	37,886	15,726	0	501	501	501	501	52,206	52,206	26,103	0	57,054	57,054	57,054	50,722	28,527	28,527	28,527	25,361	20,240	20,240	20,240	21,615
FLOW RATE (LB/HR)	122	125	128	122	66	75	31	0	1	1	1	1	104	104	52	0	113.9	113.9	113.9	101.3	56.97	56.97	56.97	50.65	40.42	40.42	40.42	43.17
FLOW RATE (GPM)	70	75	70	65	55	60	55	50	55	60	55	50	55	60	55	NA	70	75	70	65	70	75	70	65	100	100	100	100
TEMP (F)																												

STREAM NO.	8 A/B				9				10 A/B				11				12				13				14			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
CASE	8,287	8,287	8,287	3,746	45,278	45,278	45,278	44,052	22,639	22,639	22,639	22,026	39,155	39,155	19,577	0	4,255,950	4,255,950	2,127,975	0	4,255,950	4,255,950	2,127,975	0	13,052	13,052	6,526	0
FLOW RATE (LB/HR)	16.55	16.55	16.55	7.48	-	-	-	-	-	-	-	-	78	78	39	0	8,500	8,500	4,250	0	8,500	8,500	4,250	0	26	26	13	0
FLOW RATE (GPM)	100	100	100	100	77	77	77	77	151	151	151	151	-	-	-	-	87	87	87	NA	78	78	78	NA	78	78	78	NA
TEMP (F)																												

STREAM NO.	15				16 A/B				17 A/B				18 A/B				19 A/B				20 A/B			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
CASE	25,569	19,360	13,836	0	1,502,100	1,502,100	751,050	0	1,502,100	1,502,100	751,050	0	6,259	3,154	3,655	0	1,034,280	1,034,280	1,033,920	1,067,760	1,028,021	1,031,126	1,030,265	1,067,760
FLOW RATE (LB/HR)	51	39	28	0	3000	3000	1500	0	3000	3000	1500	0	12.5	6.3	7.3	0	-	-	-	-	-	-	-	-
FLOW RATE (GPM)	78	78	78	NA	40	40	40	NA	51	51	51	NA	70	70	60	NA	85	102	65	27	46	46	46	27
TEMP (F)																								

STREAM NO.	21 A/B				22 A/B				23 A/B				24 A/B				25 A/B				26				27			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
CASE	1,072,059	1,072,059	1,081,431	1,101,409	1,125	1,125	1,125	0	1,073,184	1,073,184	1,082,556	1,101,409	0	0	0	0	1,083,675	1,083,675	1,093,139	1,112,176	19,177	14,520	10,377	0	6,392	4,840	3,459	0
FLOW RATE (LB/HR)	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.4	0.4	0.4	-	-	-	-	38.3	29	20.7	0	13	10	7	0
FLOW RATE (GPM)	840	840	840	796	91	107	70	32	787	790	783	837	-	-	-	-	787	790	783	837	78	78	78	NA	78	78	78	NA
TEMP (F)																												

EMISSIONS	29			
	I	II	III	IV
NOx, PPMVD, 15% O2	25	25	25	25
NOx, PPH	43	43	43	42
CO, PPMVD, 15% O2	42	42	42	54
CO, PPH	43.9	43.9	43.9	55.4
PM 10 PARTICULATES	-	-	-	-
NH3 SLIP, LB/HR PPMVD 15% O2	-	-	-	-

REV.	DATE	DESCRIPTION	DWN	CHK
0	07-06-07	ISSUED - CEC PERMIT APPLICATION	SMG	LFB
1	12-10-07	ISSUED FOR SPPE ADDENDUM	SMG	SMT
2	5-20-08	UPDATED FOR AFC	DCA	SMT
3	6-6-08	ISSUED FOR AFC PERMIT	BGG	SMT

Sealed Only When Signed in Blue Ink

Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service

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ORANGE GROVE ENERGY L.P.
 Schaumburg, IL

ORANGE GROVE PROJECT
 PROCESS FLOW DIAGRAM

DESIGN BY: L. BEIL	CHECKED BY: L. BEIL
DRAWN BY: S. GOETZ	DATE: 6-6-07
CLIENT I.D. JP000101	SEGA PROJECT NO. 07-098
CADD FILE NAME: 07098-2C1.dwg	

DRAWING NO. **FIGURE 2C-1** REV. **3**