

Project Name MEG 1305NS
 Project Location
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-56-160
Model Number		SGE-56HM
RPM		1800
Fuel Type		Natural gas
Aspiration & NO _x	g/bhp-hr	Lean, 2.0
Supply Fuel Pressure	psi	3-5

Generator Information		
Marathon Model		743RSL4052
105°C rise NEMA-F rating	kWe	1,600
KVA		1,311
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	1,311	978	644
Mechanical Power		bHP	1,810	1,358	905
Exhaust Flow		lb/h	14,770	11,293	7,795
Exhaust Temp		°F	952	995	1,022
Heat to Radiation	(Ambient)	BTU/h	279,780	211,560	163,800
Fuel Consumption	(LHV)	BTU/h	11,359,560	8,704,290	6,022,775
Fuel Consumption	(LHV)	BTU/bHP-hr	6,276	6,412	6,655
Fuel Consumption	(LHV)	BTU/kWh	8,664	8,901	9,352

Energy Balance					
Total Primary Heat Recovered		BTU/h	5,471,173	4,381,992	3,259,056
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	5,471,173	4,381,992	3,259,056
Electrical Efficiency	(LHV)	%	39.38%	38.33%	36.48%
Thermal Efficiency	(LHV)	%	48.16%	50.34%	54.11%
Total Efficiency	(LHV)	%	87.55%	88.68%	90.60%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	562	450	334
Process Water Temp Inlet		°F	170	170	170
Process Water Temp Outlet		°F	190	190	190

Secondary Circuit <i>None</i>					
Secondary Water Flow		GPM	0	0	0
Secondary Water Temp Inlet		°F	0	0	0
Secondary Water Temp Outlet		°F	0	0	0

Steam Production					
Steam Produced		lb/h	N/A	N/A	N/A

Engine HT Circuit <i>50% Ethylene glycol</i>					
Jacket Water Heat		BTU/h	2,146,200	1,620,150	1,199,400
Exhaust Heat	cooled to 248 °F	BTU/h	2,833,633	2,304,612	1,651,896
Oil Cooler Heat		BTU/h	491,340	457,230	407,760
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	179	182	185
Jacket Water Temp Outlet		°F	194	194	194
Jacket Water Flowrate		GPM	400	400	400

Engine LT Circuit <i>50% Ethylene glycol</i>					
Intercooler Heat		BTU/h	283,200	192,780	124,530
LT Radiator Rejection		BTU/h	-283,200	-192,780	-124,530
Intercooler Water Temp Inlet		°F	126	127	129
Intercooler Water Temp Outlet		°F	131	131	131
Intercooler Water Flowrate		GPM	120	120	120

Radiator Specifications	% Oversize	Capacity BTU/h	Ambient	Altitude	Voltage
HT Radiator	10	2,901,294	105 °F	1,000 ft	480
LT Radiator	25	354,000			

Notes
 Energy balance data is stated at ISO 3046-1 conditions

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