

Project Name MEG 875NS
 Project Location
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-48-192
Model Number		SGE-48SL
RPM		1800
Fuel Type		Natural gas
Aspiration & NO _x	g/bhp-hr	Lean, 1.0
Supply Fuel Pressure	psi	3-5

Generator Information		
Marathon Model		575RSL4044
105°C rise NEMA-F rating	kWe	975
KVA		874
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	874	653	429
Mechanical Power		bHP	1,207	905	604
Exhaust Flow		lb/h	12,140	9,373	6,775
Exhaust Temp		°F	914	921	914
Heat to Radiation	(Ambient)	BTU/h	150,120	129,660	116,040
Fuel Consumption	(LHV)	BTU/h	9,502,711	7,303,557	5,196,739
Fuel Consumption	(LHV)	BTU/bHP-hr	7,873	8,068	8,611
Fuel Consumption	(LHV)	BTU/kWh	10,869	11,182	12,121

Energy Balance					
Total Primary Heat Recovered		BTU/h	5,476,647	4,323,803	3,330,173
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	5,476,647	4,323,803	3,330,173
Electrical Efficiency	(LHV)	%	31.39%	30.52%	28.15%
Thermal Efficiency	(LHV)	%	57.63%	59.20%	64.08%
Total Efficiency	(LHV)	%	89.03%	89.72%	92.23%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	563	444	342
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	2,927,400	2,274,680	1,810,200
Exhaust Heat	cooled to 248 °F	BTU/h	2,197,767	1,714,757	1,226,513
Oil Cooler Heat		BTU/h	351,480	334,367	293,460
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	175	179	182
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	208,140	183,330	110,910
LT Radiator Rejection		BTU/h	-208,140	-183,330	-110,910
Intercooler Water Temp Inlet		°F	127	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	3,606,768	105 °F	1,000 ft	480
LT Radiator	25	260,175			

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

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