

Project Name MEG 1030NS
 Project Location
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-56-172
Model Number		SGE-56SL
RPM		1800
Fuel Type		Natural gas
Aspiration & NO _x	g/bhp-hr	Lean, 1.0
Supply Fuel Pressure	psi	3-5

Generator Information		
Newage Model		PI734A
105°C rise NEMA-F rating	kWe	1,132
KVA		1,028
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	1,028	769	508
Mechanical Power		bHP	1,431	1,073	716
Exhaust Flow		lb/h	12,590	9,670	6,790
Exhaust Temp		°F	819	843	873
Heat to Radiation	(Ambient)	BTU/h	129,660	109,200	88,740
Fuel Consumption	(LHV)	BTU/h	9,599,148	7,381,814	5,161,617
Fuel Consumption	(LHV)	BTU/bHP-hr	6,708	6,878	7,214
Fuel Consumption	(LHV)	BTU/kWh	9,335	9,603	10,156

Energy Balance					
Total Primary Heat Recovered		BTU/h	5,026,107	4,014,534	3,039,781
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	5,026,107	4,014,534	3,039,781
Electrical Efficiency	(LHV)	%	36.55%	35.53%	33.60%
Thermal Efficiency	(LHV)	%	52.36%	54.38%	58.89%
Total Efficiency	(LHV)	%	88.91%	89.92%	92.49%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	516	412	312
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	2,719,200	2,111,400	1,569,600
Exhaust Heat	cooled to 248 °F	BTU/h	1,941,807	1,555,929	1,149,451
Oil Cooler Heat		BTU/h	365,100	347,205	320,730
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	176	180	183
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	174,000	127,110	88,710
LT Radiator Rejection		BTU/h	-174,000	-127,110	-88,710
Intercooler Water Temp Inlet		°F	128	129	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	3,392,730	105 °F	1,000 ft	480
LT Radiator	25	217,500			

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

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