

Project Name MEG 765NS  
 Project Location  
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-56-018
Model Number		SGE-56SL
RPM		1200
Fuel Type		Natural gas
Aspiration & NO <sub>x</sub>	g/bhp-hr	Lean, 1.0
Supply Fuel Pressure	psi	3-5

Generator Information		
Newage Model		PI736D
105°C rise NEMA-F rating	kWe	852
KVA		766
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	766	573	380
Mechanical Power		bHP	1,057	793	529
Exhaust Flow		lb/h	8,980	6,852	4,696
Exhaust Temp		°F	675	700	734
Heat to Radiation	(Ambient)	BTU/h	102,360	92,100	81,900
Fuel Consumption	(LHV)	BTU/h	6,670,727	5,096,590	3,558,391
Fuel Consumption	(LHV)	BTU/bHP-hr	6,311	6,429	6,733
Fuel Consumption	(LHV)	BTU/kWh	8,712	8,890	9,371

Energy Balance					
Total Primary Heat Recovered		BTU/h	3,291,764	2,601,460	1,950,911
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	3,291,764	2,601,460	1,950,911
Electrical Efficiency	(LHV)	%	39.16%	38.38%	36.41%
Thermal Efficiency	(LHV)	%	49.35%	51.04%	54.83%
Total Efficiency	(LHV)	%	88.51%	89.42%	91.24%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	338	267	200
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	1,965,600	1,492,711	1,083,894
Exhaust Heat	cooled to 248 °F	BTU/h	1,025,924	829,691	612,510
Oil Cooler Heat		BTU/h	300,240	279,059	254,507
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	181	184	186
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	136,500	91,474	48,252
LT Radiator Rejection		BTU/h	-136,500	-91,474	-48,252
Intercooler Water Temp Inlet		°F	128	129	130
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	2,492,424	105 °F	1,000 ft	480
LT Radiator	25	170,625			

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

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