

Project Name MEG 500NS  
 Project Location  
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-24-110
Model Number		SGE-24HM
RPM		1800
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		HCI534F
105°C rise NEMA-F rating	kwe	600
KVA		501
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	501	375	247
Mechanical Power		bHP	697	523	349
Exhaust Flow		lb/h	5,740	4,376	3,030
Exhaust Temp		°F	905	949	990
Heat to Radiation	(Ambient)	BTU/h	136,500	109,200	88,740
Fuel Consumption	(LHV)	BTU/h	4,309,551	3,308,485	2,295,918
Fuel Consumption	(LHV)	BTU/bHP-hr	6,183	6,329	6,588
Fuel Consumption	(LHV)	BTU/kWh	8,595	8,830	9,296

Energy Balance					
Total Primary Heat Recovered		BTU/h	1,768,485	1,491,463	1,176,610
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	1,768,485	1,491,463	1,176,610
Electrical Efficiency	(LHV)	%	39.70%	38.64%	36.70%
Thermal Efficiency	(LHV)	%	41.04%	45.08%	51.25%
Total Efficiency	(LHV)	%	80.73%	83.72%	87.95%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	182	153	121
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	744,000	655,684	562,800
Exhaust Heat	cooled to 248 °F	BTU/h	1,024,485	835,779	613,810
Oil Cooler Heat		BTU/h	0	0	0
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	185	187	188
Jacket Water Temp Outlet		°F	194	194	194
Jacket Water Flowrate		GPM	200	200	200

Engine LT Circuit <i>50% Ethylene glycol</i>					
Intercooler Heat		BTU/h	348,060	197,700	75,090
LT Radiator Rejection		BTU/h	-348,060	-197,700	-75,090
Intercooler Water Temp Inlet		°F	124	127	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	818,400	105 °F	1,000 ft	480
LT Radiator	25	435,075			

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

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