

Project Name MEG 335NS
 Project Location
 Prepared by Vishnu Barran

Engine Information		
Siemens Engine ID		IC-G-B-18-199
Model Number		SGE-18SL
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		433RSL4021
105°C rise NEMA-F rating	kWe	380
KVA		337
Voltage		480
Frequency	Hz	60
Power Factor		1.0

Engine Performance		Unit	100%	75%	50%
Electrical Power		kWe	337	253	166
Mechanical Power		bHP	469	352	235
Exhaust Flow		lb/h	4,160	3,255	2,336
Exhaust Temp		°F	747	770	790
Heat to Radiation	(Ambient)	BTU/h	51,180	44,340	40,920
Fuel Consumption	(LHV)	BTU/h	3,071,012	2,410,191	1,719,589
Fuel Consumption	(LHV)	BTU/bHP-hr	6,548	6,852	7,333
Fuel Consumption	(LHV)	BTU/kWh	9,110	9,544	10,348

Energy Balance					
Total Primary Heat Recovered		BTU/h	1,387,242	1,195,459	984,194
Total Secondary Heat Recovered		BTU/h	0	0	0
Total Steam Recovered		BTU/h	0	0	0
Total Heat Recovered		BTU/h	1,387,242	1,195,459	984,194
Electrical Efficiency	(LHV)	%	37.46%	35.75%	32.97%
Thermal Efficiency	(LHV)	%	45.17%	49.60%	57.23%
Total Efficiency	(LHV)	%	82.63%	85.35%	90.21%

Primary Circuit <i>Water</i>					
Process Water Flow		GPM	142	123	101
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	829,200	738,450	642,785
Exhaust Heat	cooled to 248 °F	BTU/h	558,042	457,009	341,409
Oil Cooler Heat		BTU/h	0	0	0
HT Radiator Rejection		BTU/h	0	0	0
Jacket Water Temp Inlet		°F	183	185	186
Jacket Water Temp Outlet		°F	194	194	194
Jacket Water Flowrate		GPM	180	180	180

Engine LT Circuit <i>50% Ethylene glycol</i>					
Intercooler Heat		BTU/h	228,600	145,875	74,770
LT Radiator Rejection		BTU/h	-228,600	-145,875	-74,770
Intercooler Water Temp Inlet		°F	126	128	129
Intercooler Water Temp Outlet		°F	131	131	131
Intercooler Water Flowrate		GPM	110	110	110

Radiator Specifications	% Oversize	Capacity BTU/h	Ambient	Altitude	Voltage
HT Radiator	10	912,120	105 °F	1,000 ft	480
LT Radiator	25	285,750			

Notes

Energy balance data is stated at ISO 3046-1 conditions

MEGpro v4.0.9.13

Issue Date
7/13/2018