

Predicted Performance Summary - Natural Gas					
Load Rating	100%	75%	50%	25%	
Flow rates					
Steam	30000	22500	15000	7500	lb/hr
Continuous blow down	600	450	300	150	lb/hr
Feed water	30600	22950	15300	7650	lb/hr
Fuel	1693	1259	836	417	lb/hr
Combustion air	31011	23064	15644	7961	lb/hr
Flue gas	32704	24323	16479	8377	lb/hr
Flue gas recirculation	4906	3648	2472	1257	lb/hr
Flue gas leaving furnace	37609	27972	18951	9634	lb/hr
Pressure					
Steam @ NRV	250	250	250	250	psig
Drum Operating pressure	255	255	255	255	psig
Boiler Design pressure	300	300	300	300	psig
Temperature					
Steam Temp. @ NRV	408	408	408	408	°F
Feed water entering economizer	228	228	228	228	°F
Feed water leaving economizer	318	304	293	285	°F
Flue Gas temp leaving boiler	581	519	462	419	°F
Flue Gas temp leaving economizer	298	274	255	239	°F
Draft losses					
Silencer	0.00	0.00	0.00	0.00	in. WC
Combustion air duct	0.00	0.00	0.00	0.00	in. WC
Burner	0.00	0.00	0.00	0.00	in. WC
Furnace & Boiler	2.60	1.41	0.62	0.14	in. WC
Economizer	0.58	0.34	0.17	0.05	in. WC
Flue gas duct & stack	0.37	0.23	0.16	0.08	in. WC
Total draft loss	3.55	1.98	0.95	0.27	in. WC
Boiler efficiency					
Dry gas loss	4.89	4.31	4.01	3.73	%
Fuel moisture loss	10.69	10.57	10.50	10.43	%
Air moisture loss	0.10	0.09	0.08	0.08	%
Radiation loss	0.98	1.11	1.32	1.76	%
Unburned loss	0.00	0.00	0.00	0.00	%
Manufacturer's margin	0.50	0.50	0.50	0.50	%
Total heat loss	17.16	16.58	16.40	16.49	%
Boiler efficiency	82.84	83.42	83.60	83.51	%
Heat Input & Release rates					
Boiler Heat input	37.00	27.52	18.27	9.10	MM Btu/hr
Volumetric Heat release rate	83554	62146	41258	20550	Btu/ ft ³ hr
Furnace Heat release rate	96509	71782	47655	23736	Btu/ ft ² hr
Heat recovered in Economizer					
Heat recovered in Economizer	2.33	1.43	0.78	0.32	MM Btu/hr
Water Pressure drop in Economizer	3	2	1.2	0.6	psig

see 6/22/15