



August 11, 2014

Jeffery F. Koerner, Administrator
Jeff.Koerner@dep.state.fl.us

Florida Department of Environmental Protection
Office of Permitting and Compliance
Division of Air Resources Management
2600 Blair Stone Road, MS # 5505
Tallahassee, Florida 32399-2400

**Re: Permitted Capacity after Installation of the GE Series 7FA.04
Unit 5 Turkey Point Florida Power & Light (FPL)
Permit No. 0250003-024-AC/PSD-FL-338B**

In accordance with the Permit No. 0250003-024-AC/PSD-FL-338B Section 5, Subsection III – Specific Condition A.6, Permitted Capacity: FPL is providing the required information regarding updated manufacturer's performance curves that correct for site conditions after installation of the GE Series 7FA.04 components. Please find attached updated performance curves for FPL Turkey Point Units 5A, 5B, 5C and 5D.

If you have any question or need additional information, please contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Rudy Sanchez", is written over a light-colored background.

Rudy Sanchez
PGD Regional Plant General Manager – FPL Turkey Point
Florida Power & Light Company

cc via email:

Katy Lusky (Forney): Forney.kathleen@Epa.gov
Al Linero: Alvaro.Linero@dep.state.fl.us
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(attachment)

Florida Power & Light Company

700 Universe Boulevard, Juno Beach, FL 33408

FPL Turkey Point Unit 5A

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

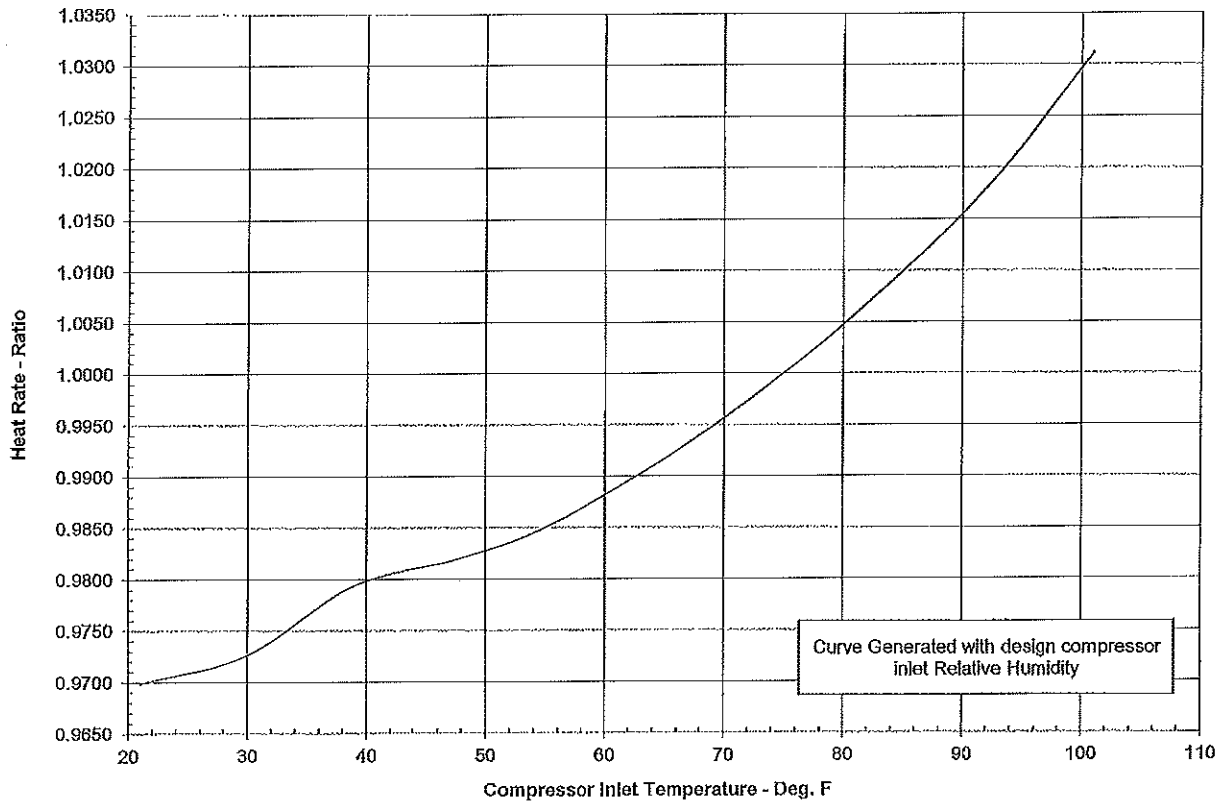
Effect of Compressor Inlet Temperature on Heat Rate

Design Values Referenced on 101H0017 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298559 ONLY



	Units										
Compressor Inlet Temperature	F	21.00	29.89	38.78	47.67	55.00	65.44	75.00	83.22	92.11	101.00
Heat Rate Ratio		0.96985	0.97257	0.97930	0.98195	0.98506	0.99204	1.00000	1.00810	1.01816	1.03121

Sarah Foley
03/03/14

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

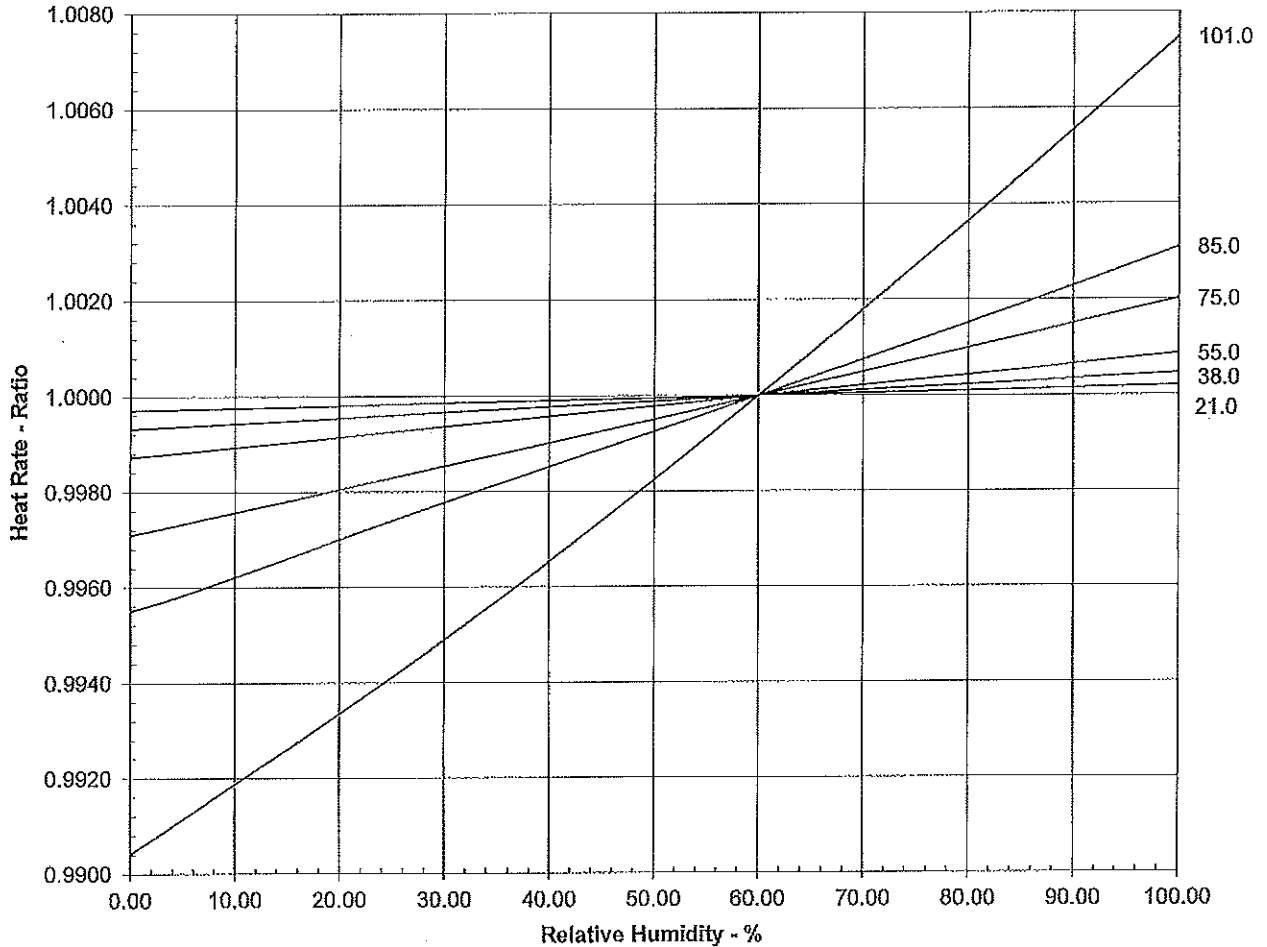
Effect of Relative Humidity on Heat Rate at Different Compressor Inlet Temperatures

Design Values Referenced on 101H0017 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298559 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	38.0	55.0	75.0	85.0	101.0
Relative Humidity - %	60.0	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	0	0.99971	0.99932	0.99872	0.99710	0.99551	0.99041
	20	0.99980	0.99955	0.99915	0.99805	0.99700	0.99335
	40	0.99990	0.99977	0.99957	0.99902	0.99852	0.99654
	50	0.99995	0.99989	0.99979	0.99951	0.99926	0.99824
	60	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	70	1.00005	1.00011	1.00022	1.00050	1.00076	1.00180
	80	1.00010	1.00023	1.00043	1.00100	1.00152	1.00365
	100	1.00020	1.00046	1.00087	1.00201	1.00309	1.00749

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

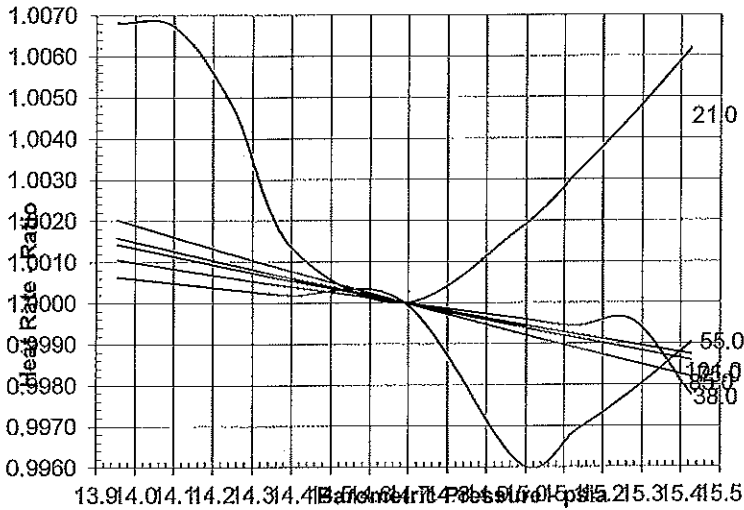
Effect of Barometric Pressure on Heat Rate at Different Compressor Inlet Temps

Design Values Referenced on 101H0017 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298559 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	38.0	55.0	75.0	85.0	101.0
Barometric Pressure - psia	13.96	1.00682	1.00063	1.00105	1.00143	1.00159	1.00202
	14.10	1.00670	1.00048	1.00083	1.00113	1.00125	1.00160
	14.25	1.00477	1.00033	1.00081	1.00083	1.00093	1.00118
	14.40	1.00140	1.00019	1.00040	1.00055	1.00061	1.00078
	14.69	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	14.98	1.00181	0.99610	0.99962	0.99948	0.99942	0.99926
	15.13	1.00313	0.99688	0.99944	0.99923	0.99914	0.99890
	15.28	1.00459	0.99787	0.99956	0.99898	0.99887	0.99854
	15.42	1.00617	0.99902	0.99777	0.99874	0.99860	0.99820

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

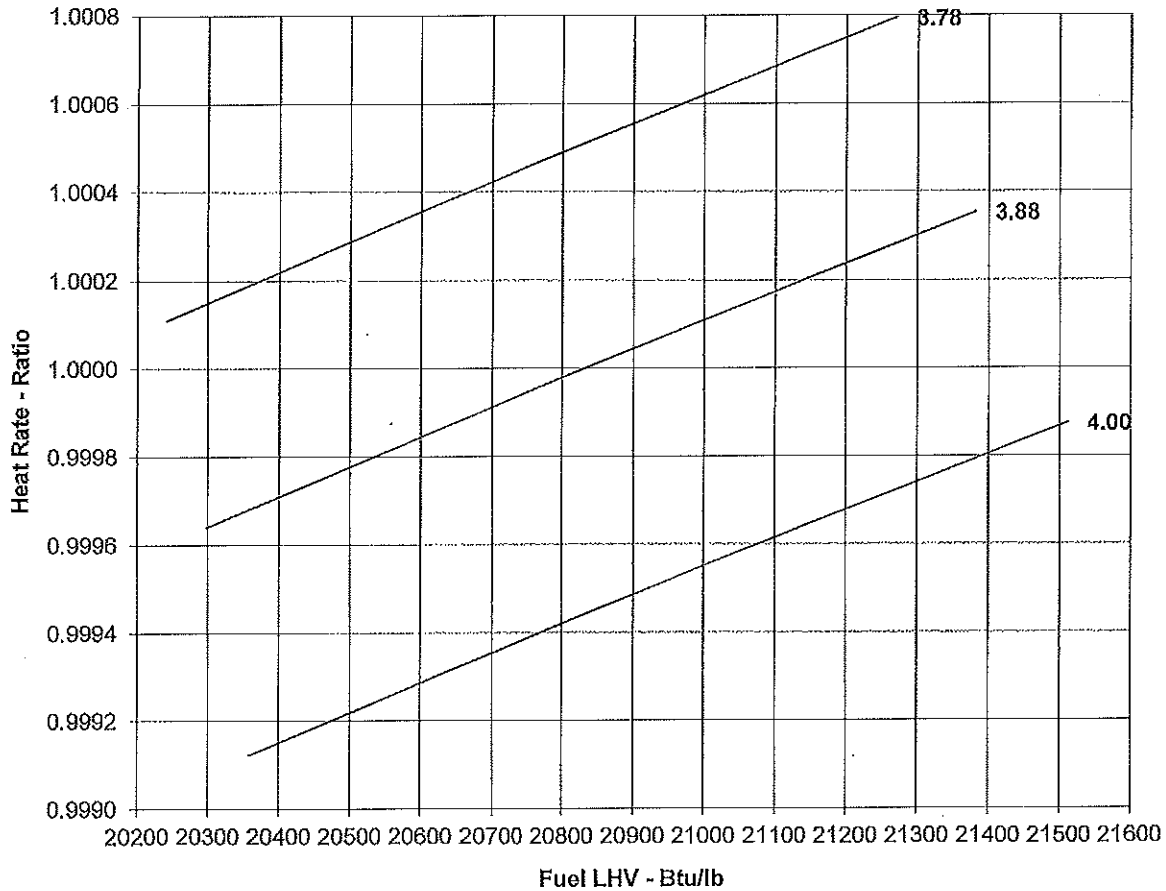
Effect of Gas Fuel Composition on Heat Rate

Design Values Referenced on 101H0017 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298559 ONLY



Fuel H/C	
Fuel LHV - Btu/lb	4.00
21511	0.99988
20923	0.99950
20359	0.99912

Fuel H/C	
Fuel LHV - Btu/lb	3.88
21831	1.00035
20831	1.00000
20297	0.99964

Fuel H/C	
Fuel LHV - Btu/lb	3.78
21269	1.00079
20748	1.00046
20241	1.00011

NOTES: H/C ratio is the atom ratio of the combustible components of the gas fuel Heating Value calculated per ASTM D3588 (14.696 psia, 60 deg F)

FPL Turkey Point Unit 5B

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

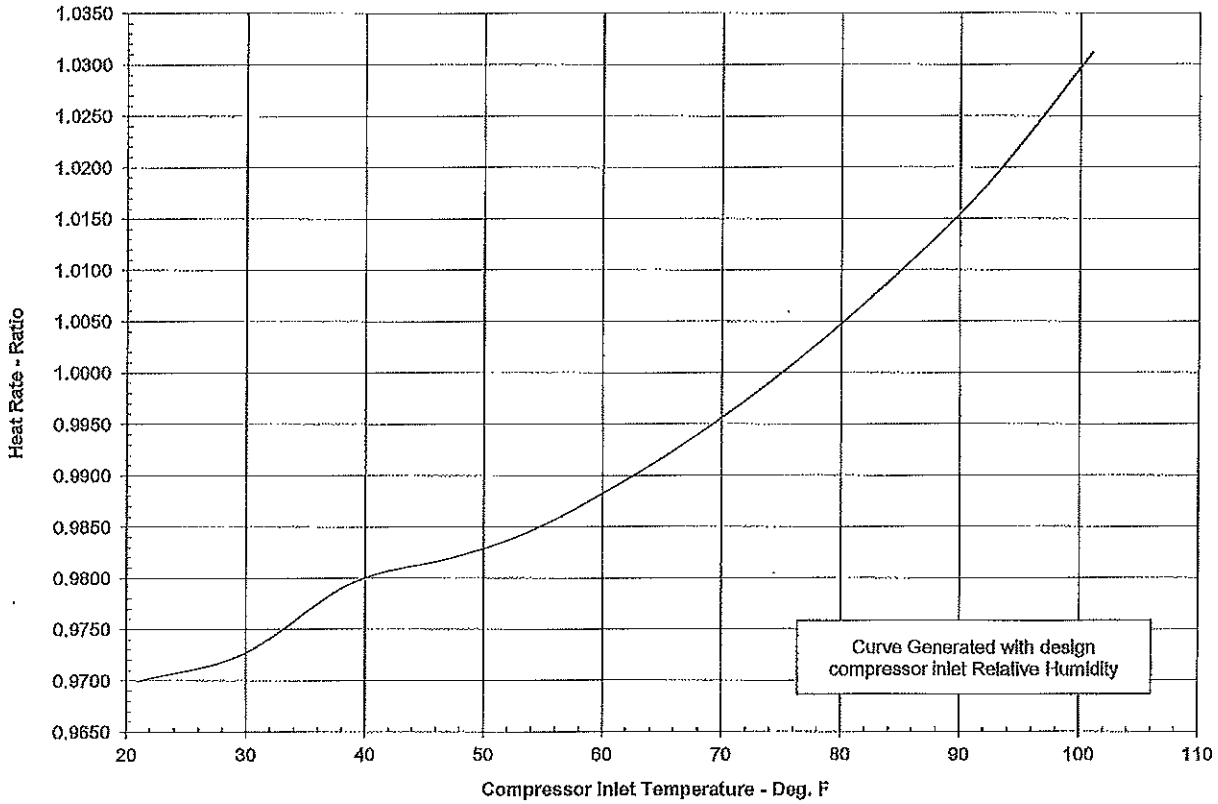
Effect of Compressor Inlet Temperature on Heat Rate

Design Values Referenced on 101H0017 Rev F Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298560 ONLY



	Units										
Compressor Inlet Temperature	F	21.00	29.89	38.78	47.67	55.00	65.44	75.00	83.22	92.11	101.00
Heat Rate Ratio		0.96994	0.97267	0.97947	0.98207	0.98514	0.99205	1.00000	1.00809	1.01813	1.03119

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

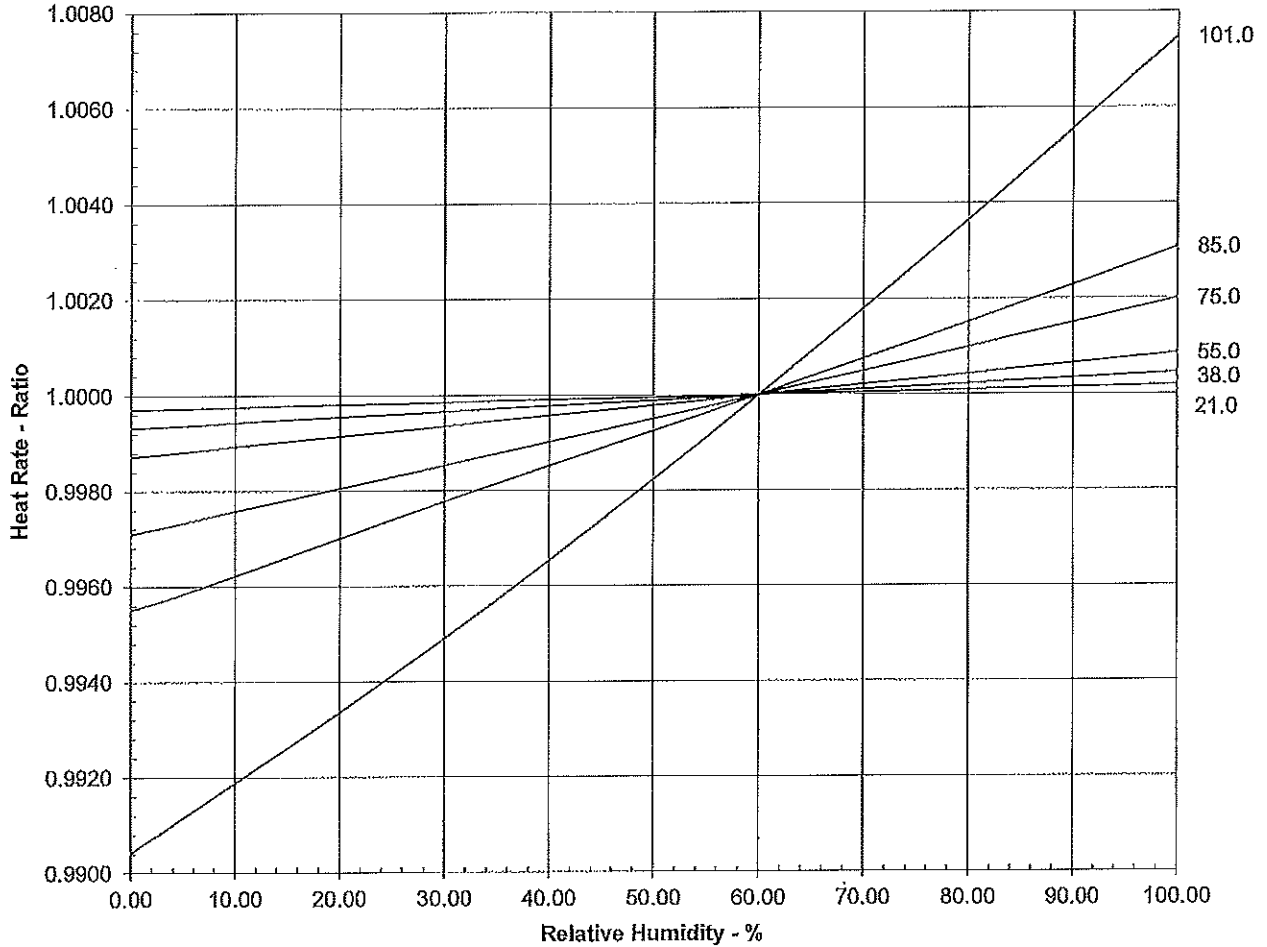
Effect of Relative Humidity on Heat Rate at Different Compressor Inlet Temperatures

Design Values Referenced on 101H0017 Rev F Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298560 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	38.0	55.0	75.0	85.0	101.0
Relative Humidity - %	60.0	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	0	0.99971	0.99932	0.99872	0.99710	0.99551	0.99042
	20	0.99981	0.99955	0.99914	0.99806	0.99701	0.99336
	40	0.99990	0.99977	0.99957	0.99902	0.99852	0.99654
	50	0.99995	0.99989	0.99979	0.99951	0.99926	0.99824
	60	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	70	1.00005	1.00011	1.00022	1.00050	1.00075	1.00180
	80	1.00010	1.00023	1.00043	1.00100	1.00152	1.00365
	90	1.00015	1.00036	1.00067	1.00150	1.00220	1.00510
	100	1.00020	1.00046	1.00087	1.00201	1.00309	1.00748

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Sheet 8

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

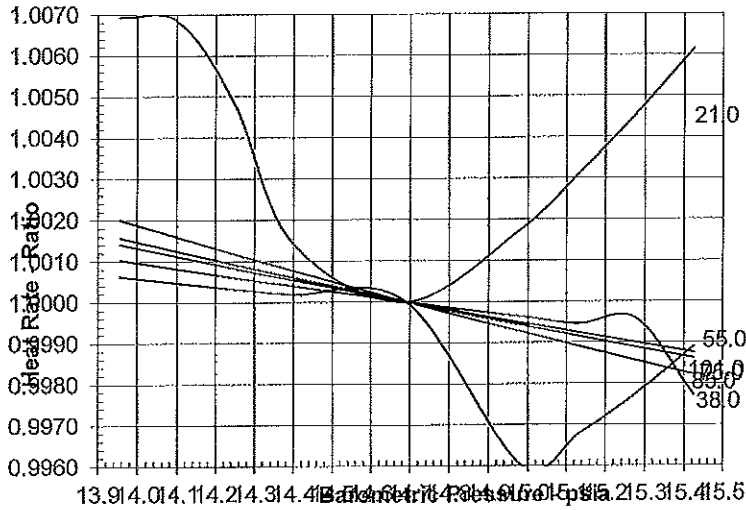
Effect of Barometric Pressure on Heat Rate at Different Compressor Inlet Temps

Design Values Referenced on 101H0017 Rev F Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298560 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	38.0	55.0	75.0	85.0	101.0
Barometric Pressure - psia	13.96	1.00694	1.00062	1.00103	1.00141	1.00157	1.00200
	14.10	1.00682	1.00047	1.00081	1.00111	1.00124	1.00158
	14.25	1.00481	1.00032	1.00060	1.00082	1.00092	1.00117
	14.40	1.00146	1.00018	1.00039	1.00054	1.00060	1.00077
	14.69	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	14.98	1.00178	0.99600	0.99963	0.99949	0.99943	0.99926
	15.13	1.00310	0.99677	0.99945	0.99924	0.99915	0.99891
	15.28	1.00455	0.99775	0.99958	0.99900	0.99888	0.99856
	15.42	1.00614	0.99890	0.99772	0.99876	0.99862	0.99822

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

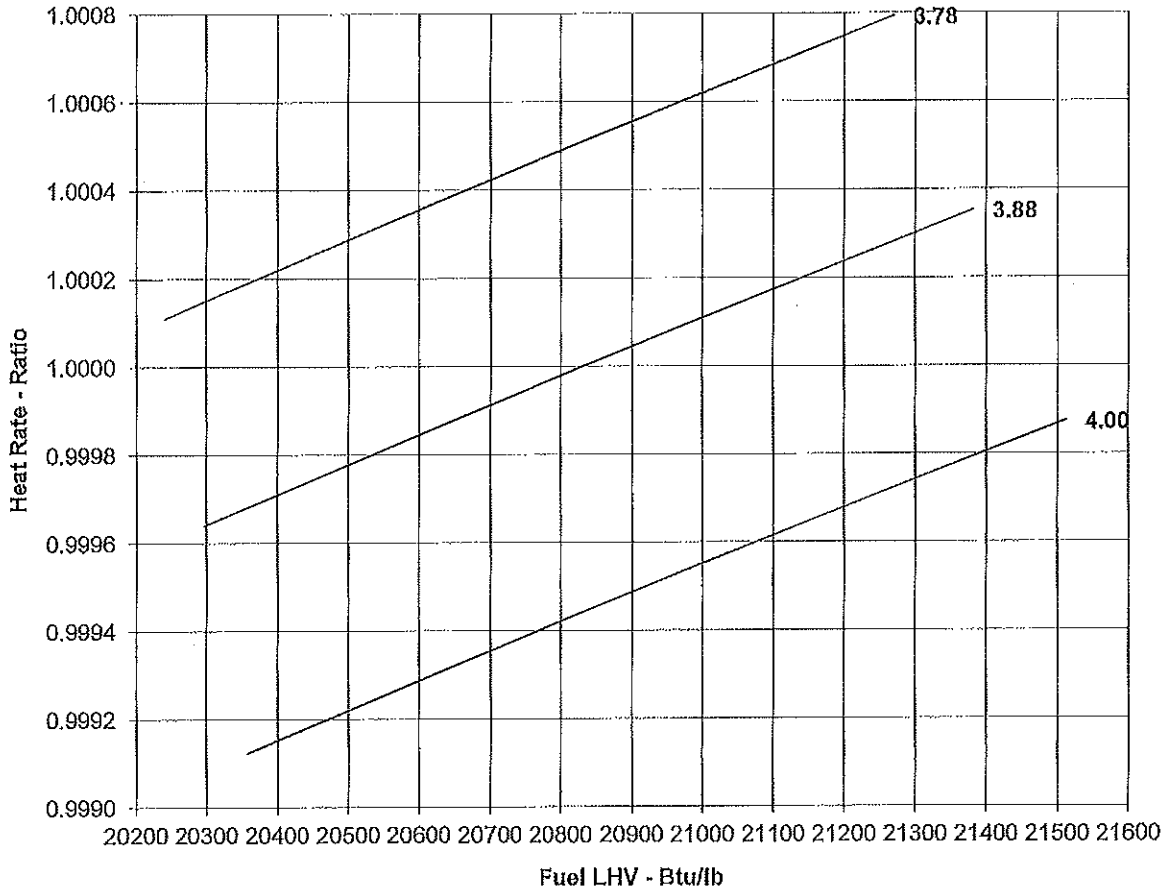
Effect of Gas Fuel Composition on Heat Rate

Design Values Referenced on 101H0017 Rev F Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298560 ONLY



Fuel H/C	
Fuel LHV - Btu/lb	4.00
21511	0.99988
20923	0.99950
20359	0.99912

Fuel H/C	
Fuel LHV - Btu/lb	3.88
21381	1.00036
20831	1.00000
20297	0.99964

Fuel H/C	
Fuel LHV - Btu/lb	3.78
21269	1.00079
20748	1.00046
20241	1.00011

NOTES: H/C ratio is the atom ratio of the combustible components of the gas fuel Heating Value calculated per ASTM D3588 (14.696 psia, 60 deg F)

FPL Turkey Point Unit 5C

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

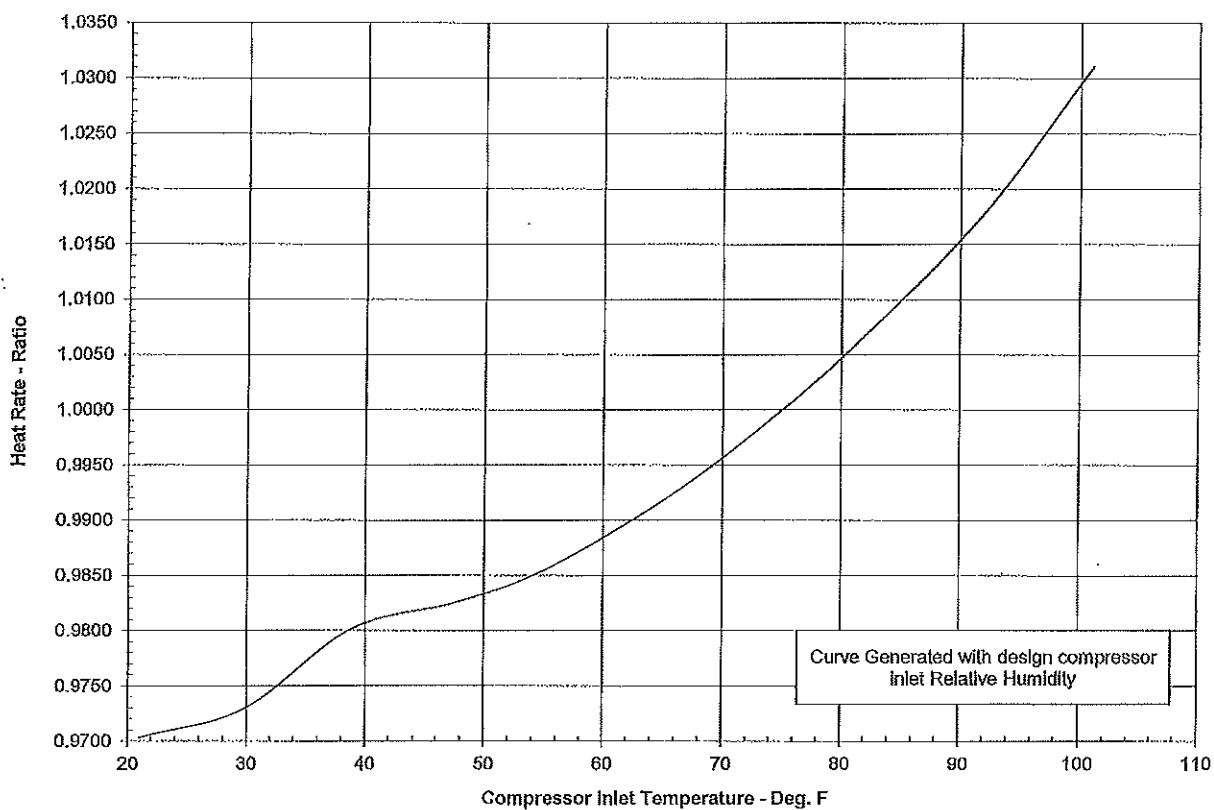
Effect of Compressor Inlet Temperature on Heat Rate

Design Values Referenced on 102H0016 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298558 ONLY



	Units										
Compressor Inlet Temperature	F	21.00	29.89	38.78	47.67	55.00	65.44	75.00	83.22	92.11	101.00
Heat Rate Ratio		0.97034	0.97300	0.98014	0.98258	0.98548	0.99210	1.00000	1.00805	1.01804	1.03108

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Sheet 4

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

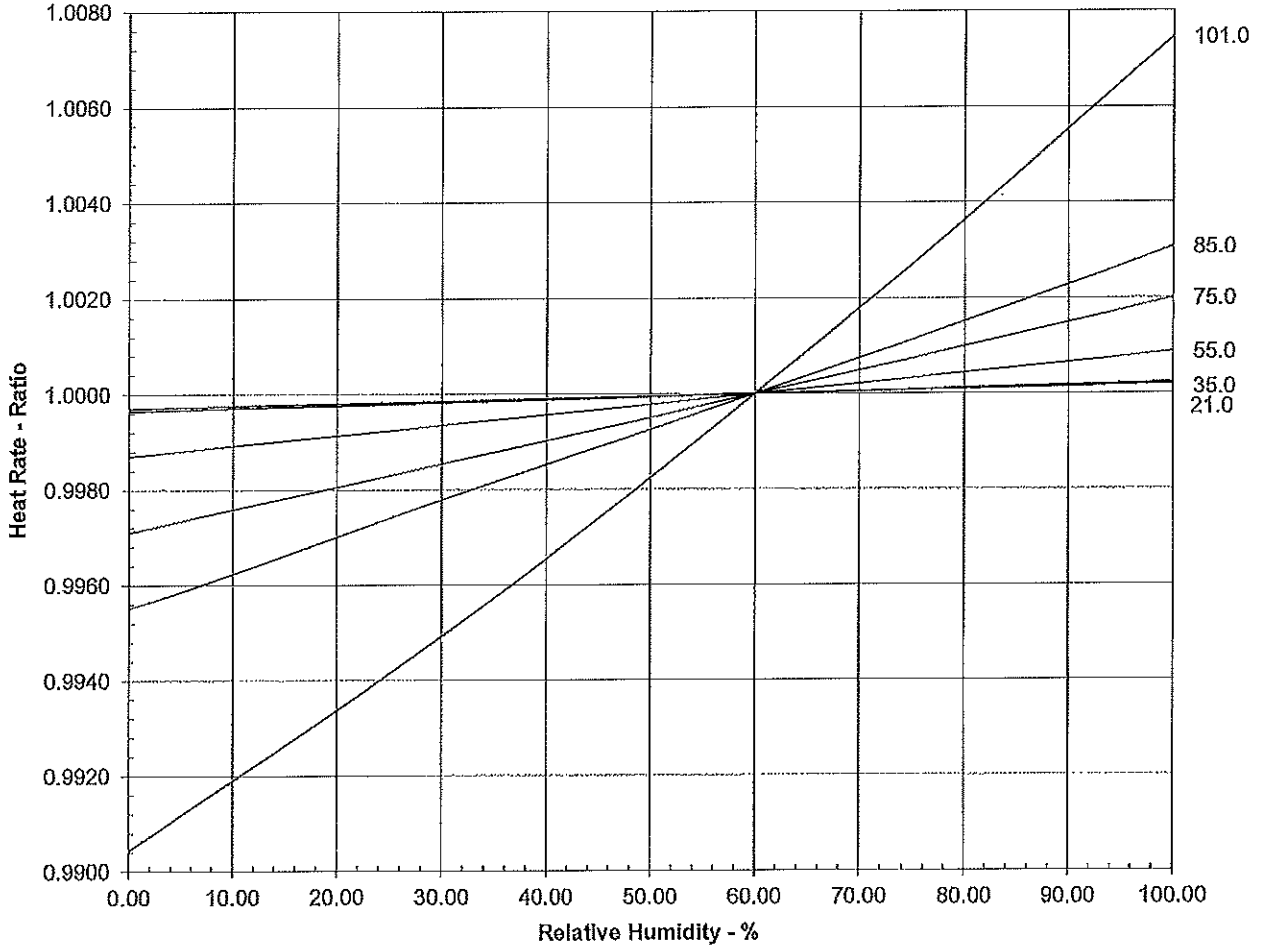
Effect of Relative Humidity on Heat Rate at Different Compressor Inlet Temperatures

Design Values Referenced on 102H0016 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298558 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	35.0	55.0	75.0	85.0	101.0
Relative Humidity - %	60.0	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	0	0.99971	0.99965	0.99871	0.99711	0.99552	0.99044
	20	0.99980	0.99976	0.99913	0.99806	0.99701	0.99337
	40	0.99990	0.99988	0.99957	0.99902	0.99853	0.99655
	50	0.99995	0.99994	0.99978	0.99951	0.99926	0.99825
	60	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	70	1.00005	1.00006	1.00022	1.00049	1.00075	1.00180
	80	1.00010	1.00012	1.00044	1.00099	1.00152	1.00365
	80	1.00010	1.00012	1.00044	1.00099	1.00152	1.00365
	100	1.00020	1.00024	1.00088	1.00200	1.00308	1.00747

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102H0016 Rev C
Sheet 8

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

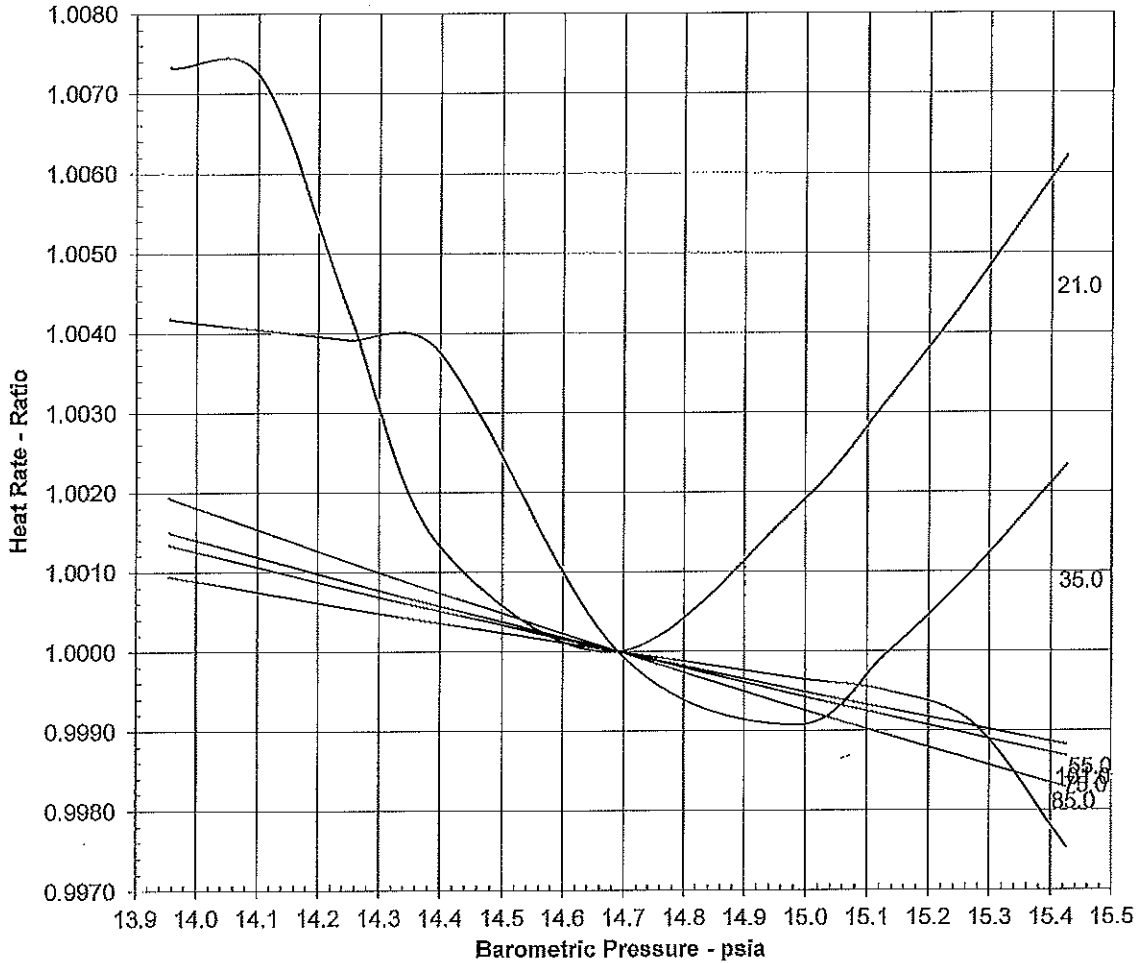
Effect of Barometric Pressure on Heat Rate at Different Compressor Inlet Temps

Design Values Referenced on 102H0016 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298558 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	35.0	55.0	75.0	85.0	101.0
Barometric Pressure - psia	13.96	1.00733	1.00417	1.00094	1.00134	1.00150	1.00193
	14.10	1.00722	1.00404	1.00074	1.00106	1.00118	1.00153
	14.25	1.00427	1.00391	1.00055	1.00078	1.00088	1.00113
	14.40	1.00136	1.00379	1.00036	1.00051	1.00058	1.00075
	14.69	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	14.98	1.00180	0.99907	0.99966	0.99951	0.99945	0.99929
	15.13	1.00314	0.99896	0.99950	0.99928	0.99919	0.99895
	15.28	1.00461	1.00106	0.99905	0.99905	0.99893	0.99861
	15.42	1.00621	1.00233	0.99754	0.99882	0.99868	0.99829

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102H0016 Rev C
Sheet 24

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

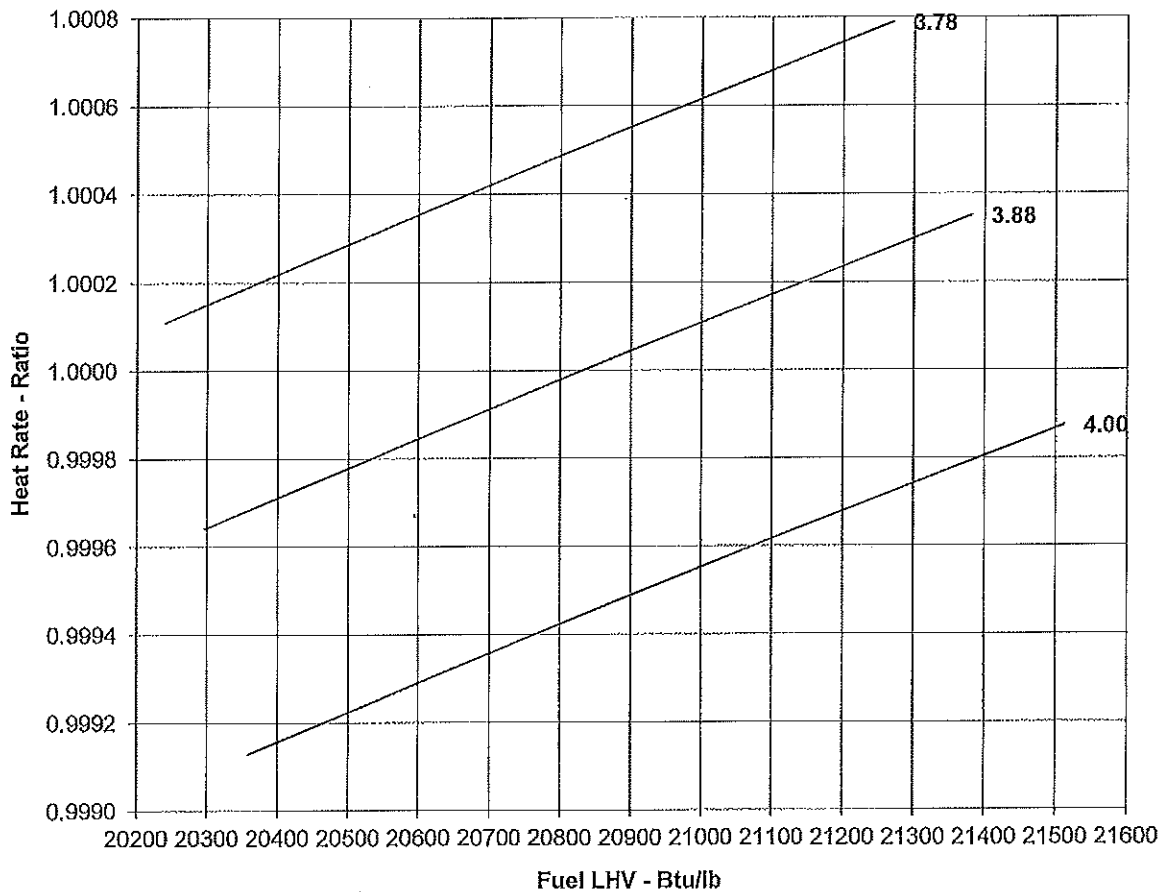
Effect of Gas Fuel Composition on Heat Rate

Design Values Referenced on 102H0016 Rev C Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298558 ONLY



Fuel H/C	
Fuel LHV - Btu/lb	Fuel H/C
21511	4.00
20923	0.99987
20359	0.99950
20359	0.99913

Fuel H/C	
Fuel LHV - Btu/lb	Fuel H/C
21381	3.88
20831	1.00035
20831	1.00000
20297	0.99964

Fuel H/C	
Fuel LHV - Btu/lb	Fuel H/C
21269	3.78
21269	1.00079
20748	1.00045
20241	1.00011

NOTES: H/C ratio is the atom ratio of the combustible components of the gas fuel Heating Value calculated per ASTM D3588 (14.696 psia, 60 deg F)

FPL Turkey Point Unit 5D

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

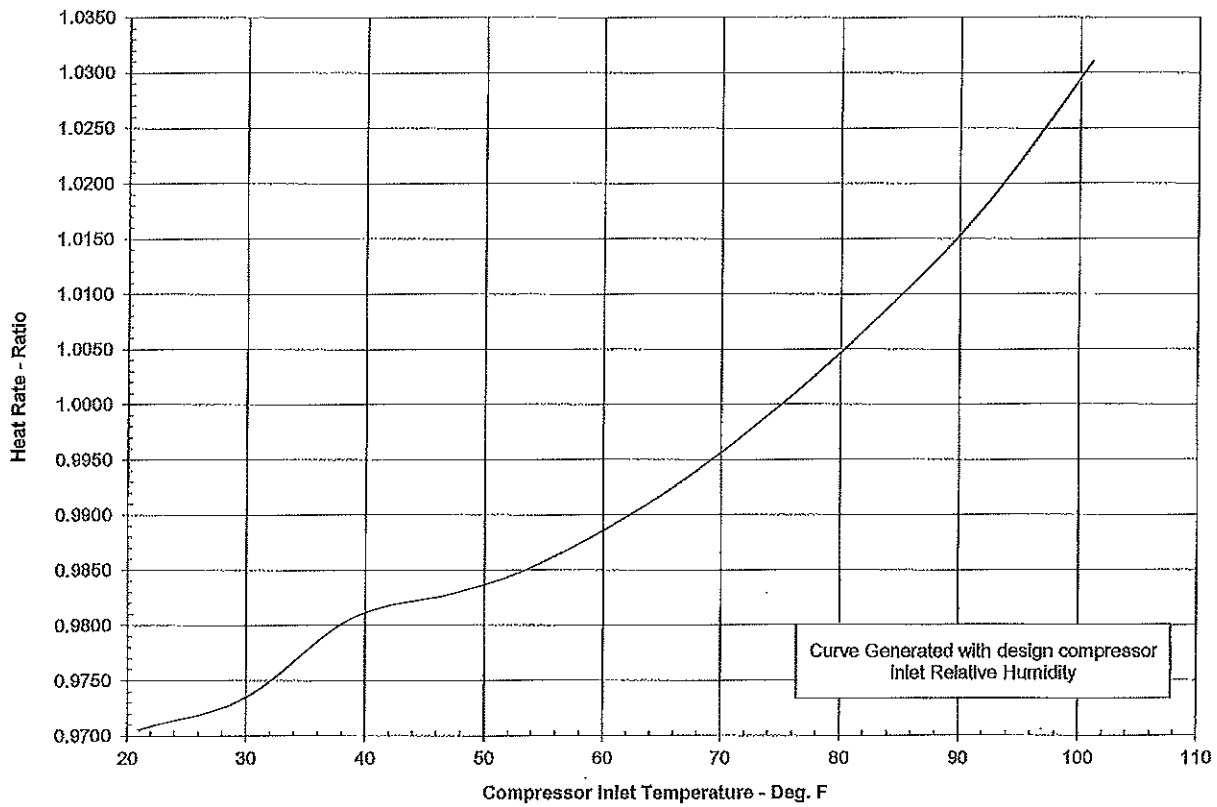
Effect of Compressor Inlet Temperature on Heat Rate

Design Values Referenced on 102H0036 Rev B Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298657 ONLY



	Units										
Compressor Inlet Temperature	F	21.00	29.89	38.78	47.67	55.00	65.44	75.00	83.22	92.11	101.00
Heat Rate Ratio		0.97058	0.97343	0.98060	0.98297	0.98576	0.99215	1.00000	1.00802	1.01799	1.03102

Bryson Cook
06/30/14

102H0036 Rev B
Sheet 4

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

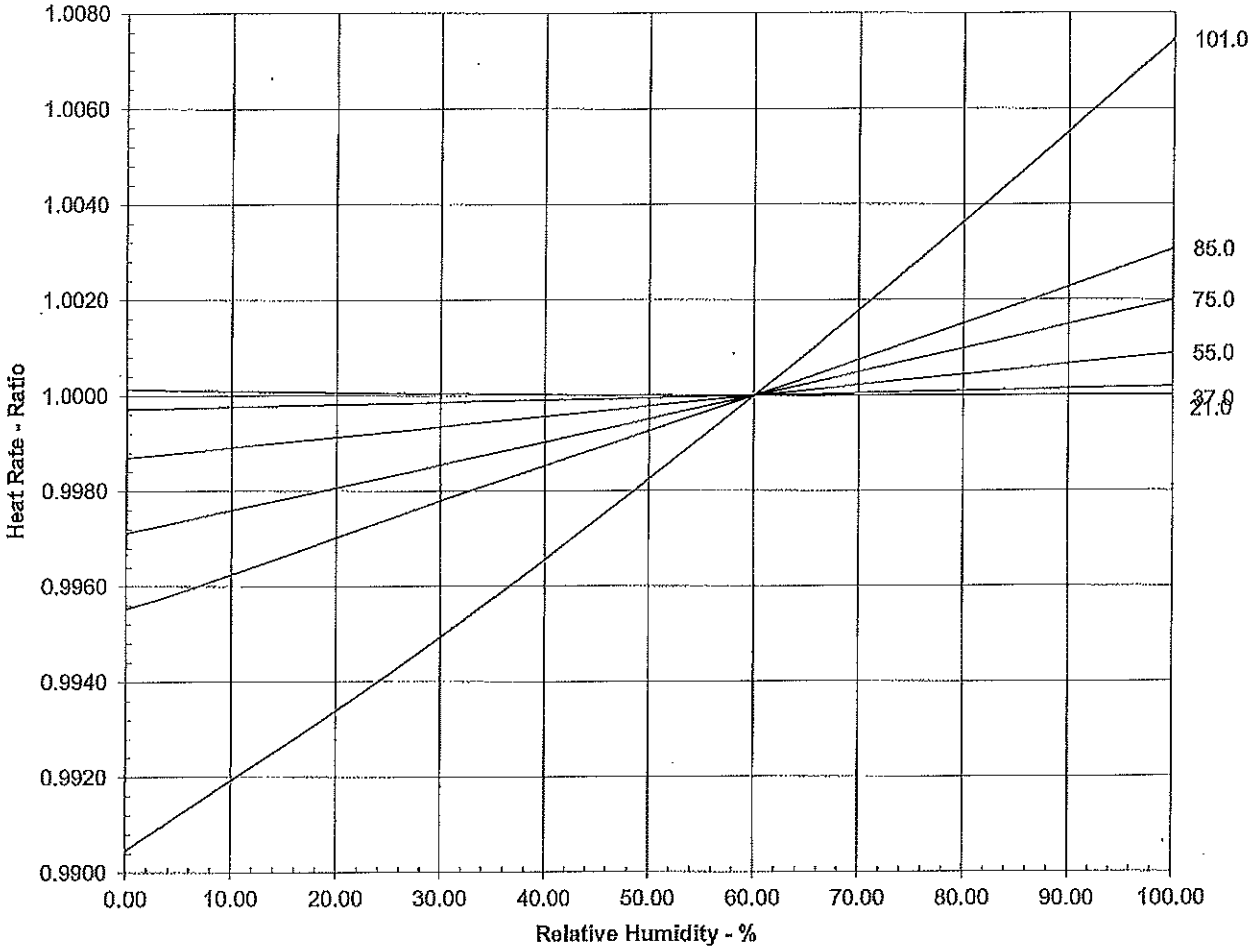
Effect of Relative Humidity on Heat Rate at Different Compressor Inlet Temperatures

Design Values Referenced on 102H0036 Rev B Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298557 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	37.0	55.0	75.0	85.0	101.0
Relative Humidity - %	60.0	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	0	0.99972	1.00013	0.99870	0.99712	0.99554	0.99047
	20	0.99981	1.00006	0.99913	0.99807	0.99702	0.99339
	40	0.99990	1.00002	0.99956	0.99903	0.99853	0.99656
	50	0.99995	1.00001	0.99978	0.99951	0.99926	0.99826
	60	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	70	1.00005	1.00000	1.00022	1.00049	1.00075	1.00179
	80	1.00010	1.00000	1.00044	1.00099	1.00151	1.00363
	100	1.00019	1.00002	1.00088	1.00200	1.00307	1.00744

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Sheet 8

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General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

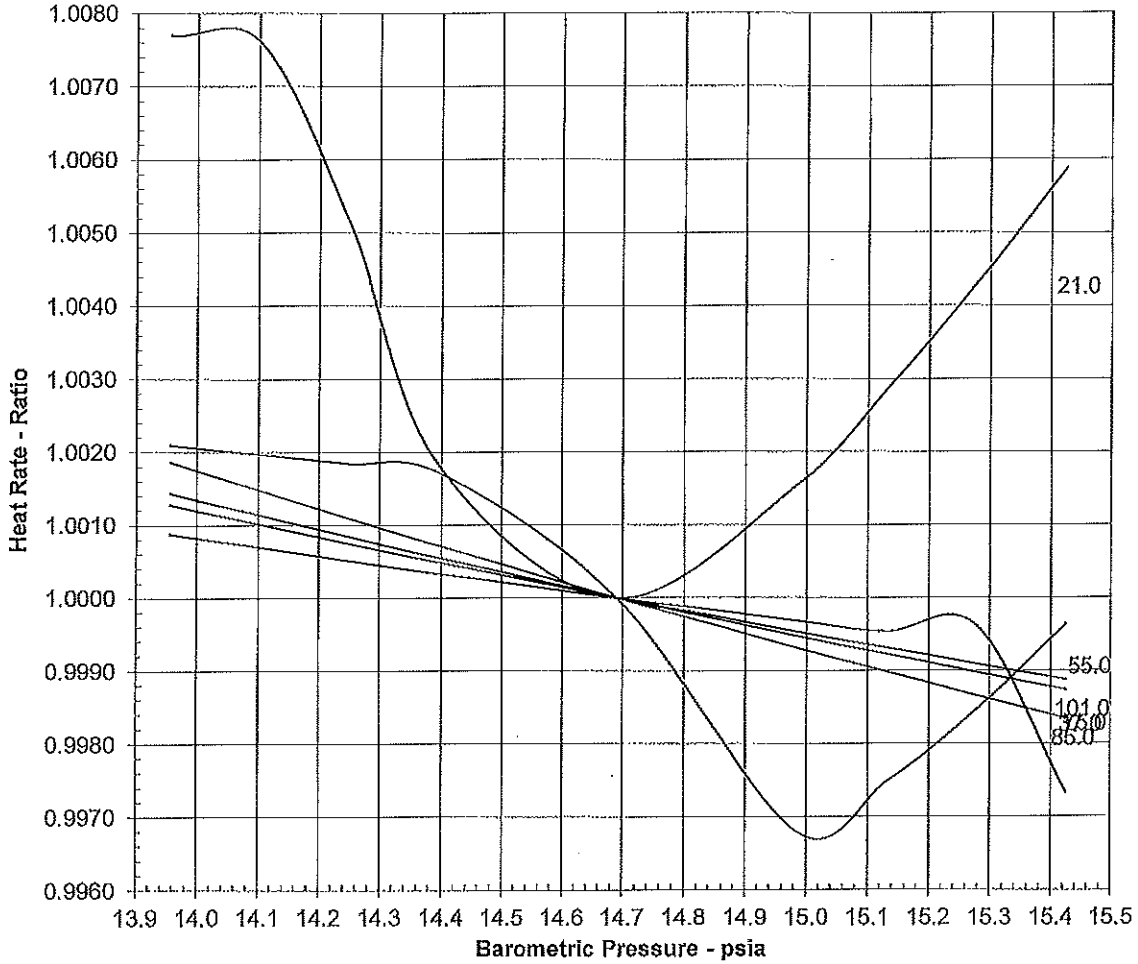
Effect of Barometric Pressure on Heat Rate at Different Compressor Inlet Temps

Design Values Referenced on 102H0036 Rev B Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298557 ONLY



		Compressor Inlet Temperature - Deg. F					
		21.0	37.0	55.0	75.0	85.0	101.0
Barometric Pressure - psia	13.96	1.00770	1.00210	1.00088	1.00128	1.00144	1.00186
	14.10	1.00759	1.00197	1.00069	1.00101	1.00113	1.00147
	14.25	1.00514	1.00184	1.00051	1.00075	1.00084	1.00109
	14.40	1.00182	1.00172	1.00033	1.00049	1.00055	1.00072
	14.69	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
	14.98	1.00154	0.99680	0.99968	0.99953	0.99947	0.99931
	15.13	1.00285	0.99748	0.99953	0.99931	0.99922	0.99898
	15.28	1.00430	0.99846	0.99962	0.99909	0.99898	0.99866
	15.42	1.00588	0.99964	0.99734	0.99888	0.99874	0.99834

General Electric Model 7FA.04 Gas Turbine Turkey Point F7006G32

Estimated Performance

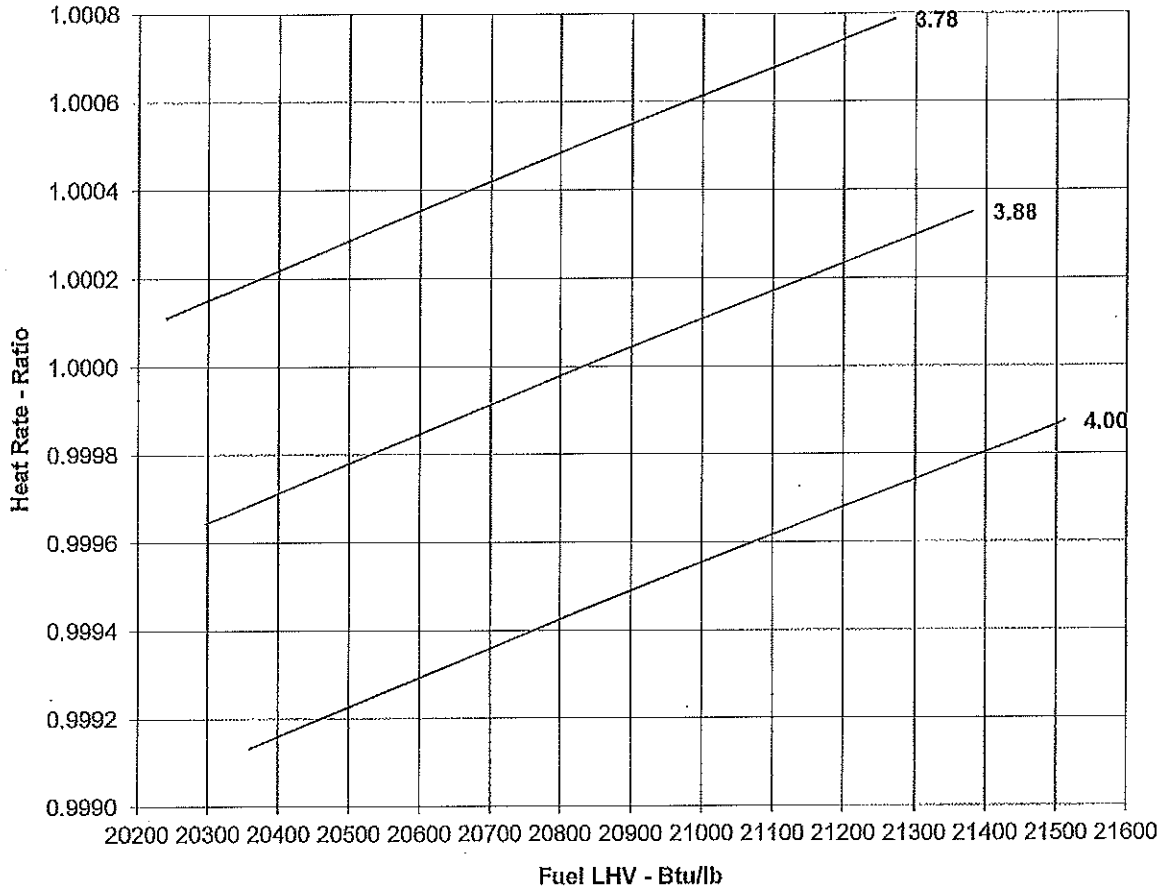
Effect of Gas Fuel Composition on Heat Rate

Design Values Referenced on 102H0036 Rev B Sheet 1

Fuel: Gas

Mode: Base

Gas Turbine Generator(s) 298557 ONLY



Fuel H/C	
	4.00
Fuel LHV - Btu/lb	21511
	0.99987
	20923
	0.99951
	20359
	0.99913

Fuel H/C	
	3.88
Fuel LHV - Btu/lb	21381
	1.00035
	20831
	1.00000
	20297
	0.99964

Fuel H/C	
	3.78
Fuel LHV - Btu/lb	21269
	1.00079
	20748
	1.00045
	20241
	1.00011

NOTES: H/C ratio is the atom ratio of the combustible components of the gas fuel Heating Value calculated per ASTM D3588 (14.696 psia, 60 deg F)