

Fuel Scenario = gas

Source	NOx	SO ₂	PM ₁₀ /PM _{2.5}	CO	CO ₂ e	Lead	HAPs	VOCs
Turbine Units NLGT1-4	1,854.54	12.22	38.38	565.47	646,043	0.00	5.97	12.21
Starter Engines	3.34	1.03	0.06	0.76	183	0.00	0.00	0.09
Lube Oil Vapor Extractors								2.25
Fuel Oil Storage Tank FH1								1.88
Facility Total =	1,857.88	13.25	38.44	566.24	646,225	0.00	5.98	16.44

Gas Turbine Units NLGT1-4 Potential To Emit When Burning Natural Gas

Calculation Basis:	NLGT1	NLGT2	NLGT3	NLGT4	
Fuel Type	Natural Gas	Natural Gas	Natural Gas	Natural Gas	
Nameplate Power Output (MW)	27	27	27	21.5	
Power Output Used for Calculation (MW)	27	27	27	21.5	102.5
Heat Rate (Btu/kWh)	16,000	16,000	16,000	13,000	
Turbine Firing Rate (MMBtu/hr)	432	432	432	279.5	
Operating Hours (hours/year)	8760	8760	8,760	987	
Total Heat Input (MMBtu/yr)	3,784,320	3,784,320	3,784,320	275,862	
Gas Heating Value (Btu/scf)	1,020	1,020	1,020	1,020	
Natural Gas Molecular Weight (lb/lb-mole)	19.5	19.5	19.5	19.5	
Standard Temperature (deg R)	527.67	527.67	527.67	527.67	
Standard Pressure (atm)	1	1	1	1	
Ideal Gas Constant R (atm-ft ³ /lb-mol deg R)	0.7302	0.7302	0.7302	0.7302	
Hourly Gas Throughput (10 ⁶ scf/hr)	0.42352941	0.42352941	0.42352941	0.27401961	
Gas Mass Flowrate (lb/hr)	21,434.53	21,434.53	21,434.53	13,867.94	
Annual Gas Throughput (10 ⁶ scf/yr)	3,710.12	3,710.12	3,710.12	270.45	
Annual Gas Mass Flow (tpy)	93,883	93,883	93,883	6,844	
	NLGT1	NLGT2	NLGT3	NLGT4	Total (tpy)
CO Emission Factor (lb/MMBtu)	0.082	0.082	0.082	0.725	
CO Emissions Permit Limit (tpy)	n/a	n/a	n/a	100	
CO Emissions (lb/hr)	35.42	35.42	35.42	202.64	
CO Emissions (tpy)	155.16	155.16	155.16	100.00	565.47
CO2e Emission Factor (lb/MMBtu)	111.11	111.11	111.11	111.11	
CO2e Emissions (lb/hr)	48,000	48,000	48,000	31,055	
CO2e Emissions (tpy)	210,239	210,239	210,239	15,326	646,043
PM10/PM2.5 Emission Factor (lb/MMBtu)	0.0066	0.0066	0.0066	0.0066	
PM10/PM2.5 Emissions (lb/hr)	2.85	2.85	2.85	1.84	
PM10/PM2.5 Emissions (tpy)	12.49	12.49	12.49	0.91	38.38
Lead Emission Factor (lb/MMBtu)	ND	ND	ND	ND	
Lead Emissions (lb/hr)	ND	ND	ND	ND	
Lead Emissions (tpy)	ND	ND	ND	ND	0.00
VOC Emission Factor (lb/MMBtu)	0.0021	0.0021	0.0021	0.0021	
VOC Emissions (lb/hr)	0.91	0.91	0.91	0.59	
VOC Emissions (tpy)	3.97	3.97	3.97	0.29	12.21
FERC Tariff Allowable Sulfur Content (grain/100 scf)	0.75	0.75	0.75	0.75	
Sulfur Content Limit (% by weight)	0.90%	0.90%	0.90%	0.80%	
SO2 Emission Rate (lbs/MMBtu)	0.002	0.002	0.002	0.002	
SO2 Emissions (lb/hr)	0.91	0.91	0.91	0.59	
SO2 Emissions (tpy)	3.98	3.98	3.98	0.29	12.22
NOx Emission Factor (lb/MMBtu)	0.32	0.32	0.32	0.276	
NOx Emissions Permit Limit (tpy)	n/a	n/a	n/a	40	
NOx Emissions (lb/hr)	138.24	138.24	138.24	77.14	
NOx Emissions (tpy)	605.49	605.49	605.49	38.07	1,854.54
Total HAPs Emission Factor (lb/MMBtu)	0.001	0.001	0.001	0.001	
Total HAPs (lb/hr)	0.44	0.44	0.44	0.29	
Total HAPs (tpy)	1.94	1.94	1.94	0.14	5.97

Gas Turbine Potential To Emit When Units NLGT1-3 Burning Diesel

Calculation Basis:	NLGT1	NLGT2	NLGT3	NLGT4	
Fuel Type	#2 Distillate	#2 Distillate	#2 Distillate	Natural Gas	
Nameplate Power Output (MW)	27	27	27	21.5	
Power Output Used for Calculation (MW)	27	27	27	21.5	
Heat Rate (Btu/kWh)	16,000	16,000	16,000	13,000	
Turbine Firing Rate (MMBtu/hr)	432	432	432	279.5	
Operating Hours (hours/year)	8760	8760	8760	987	
Total Heat Input (MMBtu/yr)	3,784,320	3,784,320	3,784,320	275,862	
Distillate Fuel Heating Value (MMBtu/10 ³ gallons)	139	139	139		
Hourly Fuel Throughput (10 ³ gal/hr)	3.11	3.11	3.11		
Annual Fuel Throughput (10 ³ gal/yr)	27,225	27,225	27,225		
	NLGT1	NLGT2	NLGT3	NLGT4	Total (tpy)
CO Emission Factor (lb/MMBtu)	0.0033	0.0033	0.0033	0.725	
CO Emissions Permit Limit (tpy)	n/a	n/a	n/a	100	
CO Emissions (lb/hr)	1.43	1.43	1.43	202.64	
CO Emissions (tpy)	6.24	6.24	6.24	100.00	118.73
CO ₂ e Emission Factor (lb/MMBtu)	157	157	157	111.1106	
CO ₂ e Emissions (lb/hr)	67,824	67,824	67,824	31,055	
CO ₂ e Emissions (tpy)	297,069	297,069	297,069	15,326	906,533
PM ₁₀ /PM _{2.5} Emission Factor (lb/MMBtu)	0.012	0.012	0.012	0.0066	
PM ₁₀ /PM _{2.5} Emissions (lb/hr)	5.18	5.18	5.18	1.84	
PM ₁₀ /PM _{2.5} Emissions (tpy)	22.71	22.71	22.71	0.91	69.03
Lead Emission Factor (lb/MMBtu)	0.000014	0.000014	0.000014	ND	
Lead Emissions (lb/hr)	0.01	0.01	0.01	ND	
Lead Emissions (tpy)	0.03	0.03	0.03	ND	0.08
VOC Emission Factor (lb/MMBtu)	0.00041	0.00041	0.00041	0.0021	
VOC Emissions (lb/hr)	0.18	0.18	0.18	0.59	
VOC Emissions (tpy)	0.78	0.78	0.78	0.29	2.62
Sulfur Content Limit (% by weight)	0.90%	0.90%	0.90%	0.80%	
SO ₂ Emission Factor (lb/MMBtu)	0.909	0.909	0.909	0.002	
SO ₂ Emissions (lb/hr)	392.69	392.69	392.69	0.59	
SO ₂ Emissions (tpy)	1,719.97	1,719.97	1,719.97	0.29	5,160.21
NO _x Emission Factor (lb/MMBtu)	0.88	0.88	0.88	0.276	
NO _x Emissions (lb/hr)	380.16	380.16	380.16	77.142	
NO _x Emissions (tpy)	1,665.10	1,665.10	1,665.10	38.07	5,033.37
Total HAPs Emission Factor (lb/MMBtu)	0.001	0.001	0.001	0.001	
Total HAPs (lb/hr)	0.56	0.56	0.56	0.29	
Total HAPs (tpy)	2.44	2.44	2.44	0.14	7.45

Gas Turbine Diesel Starter Engines NLGT1A, NLGT2A and NLGT3A Potential to Emit

Calculation Basis:	NLGT1A	NLGT2A	NLGT3A	
Fuel Type	Diesel	Diesel	Diesel	
Engine/motor rating (hp)	635	635	635	
Power output (kW)	474	474	474	
Engine thermal efficiency	32%	32%	32%	
Brake specific fuel consumption (Btu/hp-hr)	7,953	7,953	7,953	
Hourly heat input (MMBtu/hr)	5.05	5.05	5.05	
Hours of operation (hours/year) ⁴	146	146	146	
Annual heat input (MMBtu/yr)	737	737	737	
Diesel heating value (Btu/lb)	19,300	19,300	19,300	
Diesel density (lb/gal)	7.05	7.05	7.05	
Hourly fuel firing rate (gal/hr)	37.12	37.12	37.12	
Annual fuel consumption (gal/yr)	5,419	5,419	5,419	
Diesel sulfur content (% by weight)	0.9	0.9	0.9	
	<u>NLGT1A</u>	<u>NLGT2A</u>	<u>NLGT3A</u>	<u>Total</u>
CO Emission Factor (lb/hp-hr) ¹	5.5E-03	5.5E-03	5.5E-03	
CO Emissions (lb/hr)	3.49	3.49	3.49	
CO Emissions (tpy)	0.25	0.25	0.25	0.76
CO ₂ e Emission Factor (lb/MMBtu) ^{1,3}	165.25	165.25	165.25	
CO ₂ e Emissions (lb/hr)	835	835	835	
CO ₂ e Emissions (tpy)	61	61	61	183
PM ₁₀ /PM _{2.5} Emission Factor (lb/MMBtu) ²	5.73E-02	5.73E-02	5.73E-02	
PM ₁₀ /PM _{2.5} Emissions (lb/hr)	0.29	0.29	0.29	
PM ₁₀ /PM _{2.5} Emissions (tpy)	0.02	0.02	0.02	0.06
Lead Emission Factor (lb/MMBtu)	NA	NA	NA	
Lead Emissions (lb/hr)	NA	NA	NA	
Lead Emissions (tpy)	NA	NA	NA	0.00
VOC Emission Factor (lb/hp-hr) ¹	6.42E-04	6.42E-04	6.42E-04	
VOC Emissions (lb/hr)	0.41	0.41	0.41	
VOC Emissions (tpy)	0.03	0.03	0.03	0.09
SO ₂ Emission Factor (lb/hp-hr) ¹	7.42E-03	7.42E-03	7.42E-03	
SO ₂ Emissions (lb/hr)	4.71	4.71	4.71	
SO ₂ Emissions (tpy)	0.34	0.34	0.34	1.03
NO _x Emission Factor (lb/hp-hr) ¹	0.024	0.024	0.024	
NO _x Emissions (lb/hr)	15.24	15.24	15.24	
NO _x Emissions (tpy)	1.11	1.11	1.11	3.34
Total HAPs Emission Factor (lb/MMBtu) ⁵	1.70E-03	1.70E-03	1.70E-03	
Total HAPs Emissions (lb/hr)	0.01	0.01	0.01	
Total HAPs Emissions (tpy)	0.00	0.00	0.00	0.00

¹ Emission factors from AP-42 Table 3.4-1.

² AP-42 Table 3.4-2. All condensables are assumed to be ≤ 1 μm in size.

³ CO₂ emission factor from AP-42 Table 3.4-1. CH₄ and N₂O emission factor from 40 CFR 98, Table C-2.

⁴ Assume 12 minutes runtime per each start and 2 starts per day.

⁵ HAPs Emission Factor from AP-42 Tables 3.4-3 and 3.4-4 as follows:

Benzene	lb/MMBtu	7.76E-04
Toluene	lb/MMBtu	2.81E-04
Xylenes	lb/MMBtu	1.93E-04
Formaldehyde	lb/MMBtu	7.89E-05
Acetaldehyde	lb/MMBtu	2.52E-05
Acrolein	lb/MMBtu	7.88E-06
Naphthalene	lb/MMBtu	1.30E-04
Total PAH	lb/MMBtu	2.12E-04

Lube Oil Vapor Extractors (NLGT1B, NLGT2B and NLGT3B) Potential to Emit VOCs

	NLGT1B	NLGT2B	NLGT3B	
<u>Calculation Basis:</u>				
Maximum makeup to lube oil reservoir (gallons/year)	200	200	200	
Lube oil density (lbs/gallon)	7.50	7.50	7.50	
<u>Emission Estimate:</u>				Total (tpy)
Equivalent hourly VOCs emission rate (lbs/hr)	0.17	0.17	0.17	
Equivalent annual VOCs emission rate (tons/yr)	0.75	0.75	0.75	2.25

Fuel Oil Storage Tank FH1 Potential to Emit

Tanks 4.09D Calculation Basis:

Identification Tab

Identification No: NLGS FH1
Description: Vertical steel tank with fixed cone roof, white paint
State: Arizona
City: Tucson
Company: TEP

Physical Characteristics Tab

Dimension
Shell Height (ft): 39.75
Shell Diameter (ft): 114
Maximum Liquid Height (ft): 38
Average Liquid Height (ft): 19
Working Volume (gal): 2,901,459
Turnovers per Year: 28
Net Throughput (gal/yr): 81,692,228
Is Tank Heated? No

Shell Characteristics
Shell Color/Shade: White/White (D)
Shell Condition: Poor

Roof Characteristics
Color/Shade: White/White (D)
Condition: Poor
Type: Cone
Height (ft): 3.56
Slope (ft/ft) (Cone Roof): 0.06

Breather Vent Settings
Vacuum Setting (psig): -0.03
Pressure Setting (psig): 0.03

Site Selection Tab

Nearest Major City: Tucson, Arizona

Tank Contents Tab

Chemical Category of Liquid: Petroleum Distillates
Single or Multi-Component liquid: Single
Chemical Name: Distillate fuel oil no. 2
CAS Number: 68334-30-5

Tanks 4.09D Calculation Results:

Working Loss (lbs/yr): 2,552.89
Breathing Loss (lbs/yr): 1,216.60
Total VOC Emissions (tpy): 1.88

SECTION 5 - EMISSIONS RELATED INFORMATION

EMISSION SOURCES

REGULATED AIR POLLUTANT DATA			EMISSION POINT DISCHARGE PARAMETERS											
NUMBER	EMISSION POINT (1)	CHEMICAL COMPOSITION TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT (5)			STACK SOURCES (6)					NON-POINT SOURCES (7)	
	NAME	REGULATED AIR POLLUTANT NAME (2)	LB/HR (3)	TONS/ YEAR (4)	ZONE	EAST Mtr X 1000	NORTH Mtr X 1000	HEIGHT ABOVE GROUND (Feet)	HEIGHT ABOVE STRUCTURE (Feet)	DIA. (Feet)	VEL. (fps)	Temp (°F)	Length (Feet)	Width (Feet)
NLGT1	Unit #1 Gas Turbine - Natural Gas	NO _x	138	605	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	SO ₂	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	PM ₁₀ /PM _{2.5}	2.9	12.5	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	CO	35.4	155	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	VOC	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	Lead	ND	ND	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	HAPs	0.44	1.9	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - Natural Gas	CO _{2e}	48,000	210,239	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	NO _x	380	1,665	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	SO ₂	393	1,720	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	PM ₁₀ /PM _{2.5}	5.2	22.7	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	CO	1.4	6.2	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	VOC	0.18	0.78	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	Lead	0.01	0.03	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	HAPs	0.56	2.4	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1	Unit #1 Gas Turbine - No. 2 Diesel	CO _{2e}	67,824	297,069	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	NO _x	15.2	1.1	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	SO ₂	4.7	0.34	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	PM ₁₀ /PM _{2.5}	0.29	0.02	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	CO	3.5	0.25	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	VOC	0.41	0.03	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	Lead	NA	NA	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	HAPs	0.01	0.00	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1A	North Loop Westinghouse Unit #1 Diesel Starter Engine	CO _{2e}	835	61	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT1B	North Loop Westinghouse Unit #1 Gas Turbine Lube Oil Vapor Extractor	VOC	0.17	0.75	12	509	3558	16	NA	0.25	NA	110	NA	NA

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 2608 FEET
 ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions

- | | | |
|---|--|--|
| <p>(1) Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.</p> <p>(2) Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical components names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), Particulate matter (PM), particulate less than 10 microns (PM10), etc. Abbreviations are O.K.</p> | <p>(3) Pounds per hour (#/HR) is maximum potential emission rate expected by applicant</p> <p>(4) Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule</p> <p>(5) As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.</p> | <p>(6) Supply additional information as follows if applicable:</p> <p>a. Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.</p> <p>b. Stack's height above supporting or adjacent structures if structure is within 3 "stack heights above the ground" of stack.</p> <p>(7) Dimensions of non-point sources as defined in R-18-2-101.</p> <p>(8) 10.75' X 10.75'</p> |
|---|--|--|

SECTION 5 - EMISSIONS RELATED INFORMATION

EMISSION SOURCES (Continued)

REGULATED AIR POLLUTANT DATA			EMISSION POINT DISCHARGE PARAMETERS											
NUMBER	EMISSION POINT (1)	CHEMICAL COMPOSITION TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT (5)			STACK SOURCES (6)					NON-POINT SOURCES (7)	
	NAME	REGULATED AIR POLLUTANT NAME (2)	LB/HR (3)	TONS/ YEAR (4)	ZONE	EAST Mtr X 1000	NORTH Mtr X 1000	HEIGHT ABOVE GROUND (Feet)	HEIGHT ABOVE STRUCTURE (Feet)	DIA. (Feet)	VEL. (fps)	Temp (°F)	Length (Feet)	Width (Feet)
NLGT2	Unit #2 Gas Turbine - Natural Gas	NO _x	138	605	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	SO ₂	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	PM ₁₀ /PM _{2.5}	2.9	12.5	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	CO	35.4	155	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	VOC	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	Lead	ND	ND	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	HAPs	0.44	1.9	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - Natural Gas	CO _{2e}	48,000	210,239	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	NO _x	380	1,665	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	SO ₂	393	1,720	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	PM ₁₀ /PM _{2.5}	5.2	22.7	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	CO	1.4	6.2	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	VOC	0.18	0.78	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	Lead	0.01	0.03	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	HAPs	0.56	2.4	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2	Unit #2 Gas Turbine - No. 2 Diesel	CO _{2e}	67,824	297,069	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	NO _x	15.2	1.1	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	SO ₂	4.7	0.34	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	PM ₁₀ /PM _{2.5}	0.29	0.02	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	CO	3.5	0.25	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	VOC	0.41	0.03	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	Lead	NA	NA	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	HAPs	0.01	0.00	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2A	North Loop Westinghouse Unit #2 Diesel Starter Engine	CO _{2e}	835	61	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT2B	North Loop Westinghouse Unit #2 Gas Turbine Lube Oil Vapor Extractor	VOC	0.17	0.75	12	509	3558	16	NA	0.25	NA	110	NA	NA

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 2608 FEET

ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions

- (1) Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
- (2) Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical components names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), Particulate matter (PM), particulate less than 10 microns (PM10), etc. Abbreviations are O.K.
- (3) Pounds per hour (#/HR) is maximum potential emission rate expected by applicant
- (4) Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule
- (5) As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
- (6) Supply additional information as follows if applicable:
 - a. Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - b. Stack's height above supporting or adjacent structures if structure is within 3 *stack heights above the ground" of stack.
- (7) Dimensions of non-point sources as defined in R-18-2-101.
- (8) 10.75' X 10.75'

SECTION 5 - EMISSIONS RELATED INFORMATION

EMISSION SOURCES (Continued)

REGULATED AIR POLLUTANT DATA			EMISSION POINT DISCHARGE PARAMETERS											
NUMBER	EMISSION POINT (1)	CHEMICAL COMPOSITION TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT (5)			STACK SOURCES (6)					NON-POINT SOURCES (7)	
	NAME	REGULATED AIR POLLUTANT NAME (2)	LB/HR (3)	TONS/ YEAR (4)	ZONE	EAST Mtr X 1000	NORTH Mtr X 1000	HEIGHT ABOVE GROUND (Feet)	HEIGHT ABOVE STRUCTURE (Feet)	DIA. (Feet)	VEL. (fps)	Temp (°F)	Length (Feet)	Width (Feet)
NLGT3	Unit #3 Gas Turbine - Natural Gas	NO _x	138	605	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	SO ₂	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	PM ₁₀ /PM _{2.5}	2.9	12.5	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	CO	35.4	155	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	VOC	0.91	4.0	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	Lead	ND	ND	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	HAPs	0.44	1.9	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - Natural Gas	CO _{2e}	48,000	210,239	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	NO _x	380	1,665	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	SO ₂	393	1,720	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	PM ₁₀ /PM _{2.5}	5.2	22.7	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	CO	1.4	6.2	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	VOC	0.18	0.78	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	Lead	0.01	0.03	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	HAPs	0.56	2.4	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3	Unit #3 Gas Turbine - No. 2 Diesel	CO _{2e}	67,824	297,069	12	509	3558	41.8	23	(8)	24.1	920	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	NO _x	15.2	1.1	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	SO ₂	4.7	0.34	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	PM ₁₀ /PM _{2.5}	0.29	0.02	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	CO	3.5	0.25	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	VOC	0.41	0.03	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	Lead	NA	NA	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	HAPs	0.01	0.00	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3A	North Loop Westinghouse Unit #3 Diesel Starter Engine	CO _{2e}	835	61	12	509	3558	14.2	NA	0.67	NA	NA	NA	NA
NLGT3B	North Loop Westinghouse Unit #3 Gas Turbine Lube Oil Vapor Extractor	VOC	0.17	0.75	12	509	3558	16	NA	0.25	NA	110	NA	NA

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 2608 FEET

ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions

- (1) Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
- (2) Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical components names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), Particulate matter (PM), particulate less than 10 microns (PM10), etc. Abbreviations are O.K.
- (3) Pounds per hour (#/HR) is maximum potential emission rate expected by applicant
- (4) Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule
- (5) As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
- (6) Supply additional information as follows if applicable:
 - a. Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - b. Stack's height above supporting or adjacent structures if structure is within 3 *stack heights above the ground" of stack.
- (7) Dimensions of non-point sources as defined in R-18-2-101.
- (8) 10.75' X 10.75'

SECTION 5 - EMISSIONS RELATED INFORMATION

EMISSION SOURCES (Continued)

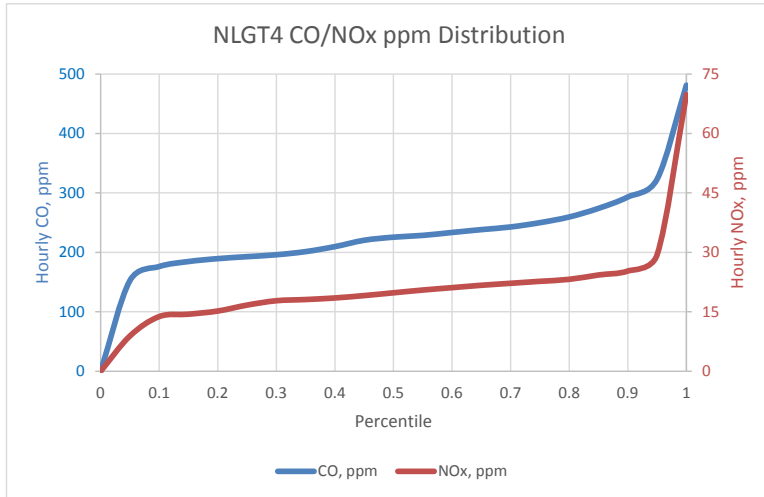
REGULATED AIR POLLUTANT DATA			EMISSION POINT DISCHARGE PARAMETERS											
NUMBER	EMISSION POINT (1)	CHEMICAL COMPOSITION TOTAL STREAM	R. AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT (5)			STACK SOURCES (6)					NON-POINT SOURCES (7)	
	NAME	REGULATED AIR POLLUTANT NAME (2)	LB/HR (3)	TONS/YEAR (4)	ZONE	EAST Mtr X 1000	NORTH Mtr X 1000	HEIGHT ABOVE GROUND (Feet)	HEIGHT ABOVE STRUCTURE (Feet)	DIA. (Feet)	VEL. (fps)	Temp (°F)	Length (Feet)	Width (Feet)
NLGT4	Unit #4 Gas Turbine - Natural Gas	NO _x	77.1	38.1										
NLGT4	Unit #4 Gas Turbine - Natural Gas	SO ₂	0.59	0.29										
NLGT4	Unit #4 Gas Turbine - Natural Gas	PM ₁₀ /PM _{2.5}	1.8	0.91										
NLGT4	Unit #4 Gas Turbine - Natural Gas	CO	202.6	100.0										
NLGT4	Unit #4 Gas Turbine - Natural Gas	VOC	0.59	0.29										
NLGT4	Unit #4 Gas Turbine - Natural Gas	Lead	ND	ND										
NLGT4	Unit #4 Gas Turbine - Natural Gas	HAPs	0.29	0.14										
NLGT4	Unit #4 Gas Turbine - Natural Gas	CO2e	31,055	15,326										
FH1	Fuel Oil Storage Tank #1	VOC		1.9										

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 2608 FEET
 ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions

- | | | |
|--|---|---|
| (1) Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K. | (3) Pounds per hour (#/HR) is maximum potential emission rate expected by applicant | (6) Supply additional information as follows if applicable:
a. Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
b. Stack's height above supporting or adjacent structures if structure is within 3 "stack heights above the ground" of stack. |
| (2) Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical components names are: Carbon Monoxide (CO), Nitrogen Oxides (NOx), Sulfur Dioxide (SO2), Volatile Organic Compounds (VOC), Particulate matter (PM), particulate less than 10 microns (PM10), etc. Abbreviations are O.K. | (4) Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule | (7) Dimensions of non-point sources as defined in R-18-2-101. |
| | (5) As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines. | (8) 10.75' X 10.75' |

Percentile	ppm CO	pmm NOx
0	0	0
0.05	152.6	8.9
0.1	176.2	13.8
0.15	184.6	14.4
0.2	189.5	15.2
0.25	192.8	16.7
0.3	196	17.8
0.35	201.3	18.1
0.4	209.7	18.5
0.45	220.4	19.1
0.5	225.6	19.8
0.55	228.6	20.5
0.6	233.5	21.1
0.65	238.3	21.7
0.7	242.8	22.2
0.75	250	22.7
0.8	259.6	23.2
0.85	274.1	24.3
0.9	293.2	25.3
0.95	323.2	29.4
1	481.3	69.8



Tables 3.1-1 and 3.1-2a

Exerpt: Uncontrolled Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines

Emission Factor (lb/MMBtu)

Pollutant	Natural Gas	Distillate Oil
CO (uncontrolled)	0.082	0.0033
CO (water injection)	0.03	0.076
CO ₂	110	157
Methane	8.6E-03	ND
N ₂ O	0.003	ND
PM (condensable)	4.7E-03	7.2E-03
PM (filterable)	1.9E-03	4.3E-03
PM (total)	6.6E-03	1.2E-02
Lead	ND	1.4E-05
VOC	2.1E-03	4.1E-04
SO ₂	0.94S	1.01S
NO _x (uncontrolled)	0.32	0.88
NO _x (water injection)	1.3E-01	2.4E-01

Tables 3.1-3, 4 and 5

Uncontrolled Emission Factors for Hazardous Air Pollutants from Stationary Gas Turbines

Emission Factor (lb/MMBtu)

Pollutant	Natural Gas	Distillate Oil
1,3-Butadiene	0.00000043	0.000016
Acetaldehyde	0.00004	ND
Acrolein	0.0000064	ND
Benzene	0.000012	0.000055
Ethylbenzene	0.000032	ND
Formaldehyde	0.00071	0.00028
Naphthalene	0.0000013	0.000035
PAH	0.0000022	0.00004
Propylene Oxide	0.000029	ND
Toluene	0.00013	ND
Xylenes	0.000064	ND
Arsenic	ND	0.000011
Beryllium	ND	0.00000031
Cadmium	ND	0.0000048
Chromium	ND	0.000011
Lead	ND	0.000014
Manganese	ND	0.00079
Mercury	ND	0.0000012
Nickel	ND	0.0000046
Selenium	ND	0.000025