Emission Sources - Maximum Allowable Emission Rates

Permit Number 38659 and PSDTX922

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
CTG-1	Turbine No. 1 (GE 7241FA) Combustion Turbine/HRSG Stack	**Combined-Cycle Gas Turbine Only Operation (Maximum Hourly Limits)**		
		NO_X	63.00	
		CO	51.70	
		VOC	3.00	
		$PM/PM_{10}/PM_{2.5}$	18.00	
		SO_2	2.50	
		Combined-Cycle Gas Turbine MSS Operations (Maximum Hourly Limits)		
		NO_X	250.00	
		CO	2100.00	
		VOC	183.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
		Combined-Cycle Gas Turbine with HRSG Duct Burner (Maximum Hourly Limits)		
		NO_X	79.00	
		CO	67.70	
		VOC	5.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	

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CTG-2	Turbine No. 2 (GE 7241FA) Combustion Turbine/HRSG Stack	**Combined-Cycle Gas Turbine Only Operation (Maximum Hourly Limits)**		
		NO_X	63.00	
		CO	51.70	
		VOC	3.00	
		$PM/PM_{10}/PM_{2.5}$	18.00	
		SO_2	2.50	
		Combined-Cycle Gas Turbine MSS Operations (Maximum Hourly Limits)		
		NO_X	250.00	
		CO	2100.00	
		VOC	183.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
		Combined-Cycle Gas Turbine with HRSG Duct Burner (Maximum Hourly Limits)		
		NO_X	79.00	
		CO	67.70	
		VOC	5.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
CTG-3	Turbine No. 3 (GE 7241FA) Combustion Turbine/HRSG Stack	**Combined-Cycle Gas Turbine Only Operation (Maximum Hourly Limits)**		
		NO_X	63.00	

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		CO	51.70	
		VOC	3.00	
		$PM/PM_{10}/PM_{2.5}$	18.00	
		SO_2	2.50	
		Combined-Cycle Gas Turbine MSS Operations (Maximum Hourly Limits)		
		NO_X	250.00	
		CO	2100.00	
		VOC	183.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
		Combined-Cycle Gas Turbine with HRSG Duct Burner (Maximum Hourly Limits)		
		NO_X	79.00	
		CO	67.70	
		VOC	5.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
CTG-4	Turbine No. 4 (GE 7241FA) Combustion Turbine/HRSG Stack	**Combined-Cycle Gas Turbine Only Operation (Maximum Hourly Limits)**		
		NO_X	63.00	
		CO	51.70	
		VOC	3.00	

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		$PM/PM_{10}/PM_{2.5}$	18.00	
		SO_2	2.50	
		Combined-Cycle Gas Turbine MSS Operations (Maximum Hourly Limits)		
		NO_X	250.00	
		CO	2100.00	
		VOC	183.00	
		$PM/PM_{10}/PM_{2.5}$	20.00	
		SO_2	2.80	
		Combined-Cycle Gas Turbine with HRSG Duct Burner (Maximum Hourly Limits)		
		NO_X	79.0	
		CO	67.7	
		VOC	5.0	
		$PM/PM_{10}/PM_{2.5}$	20.0	
		SO_2	2.8	
CTG-1 CTG-2 CTG-3 and CTG-4	Combined Annual Limits Turbines plus duct burners	**Combined Normal Operating and MSS Annual Emissions (Maximum Annual Limits)**		
		NO_X		1137.20
		CO		946.00
		VOC		65.10
		$PM/PM_{10}/PM_{2.5}$		331.40
		SO_2		42.70

Emission Sources - Maximum Allowable Emission Rates

Ancillary Sources (Hourly and Annual Limits)				
F-1 (5)	Natural Gas, Lube/Hydraulic Oil, and Seal Oil Piping for Units 1 through 4	VOC	0.88	3.66
LO-RSV-CT1	Vent for Main Lube Oil Reservoir for Unit 1 Combustion Turbine	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-RSV-CT2	Vent for Main Lube Oil Reservoir for Unit 2 Combustion Turbine	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-RSV-CT3	Vent for Main Lube Oil Reservoir for Unit 3 Combustion Turbine	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-RSV-CT4	Vent for Main Lube Oil Reservoir for Unit 4 Combustion Turbine	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-RSV-ST1	Vent for Main Lube Oil Reservoir for Steam Turbine 1	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-RSV-ST2	Vent for Main Lube Oil Reservoir for Steam Turbine 2	VOC	0.08	0.18
		$PM/PM_{10}/PM_{2.5}$	0.08	0.18
LO-DTR-CT1	Bearing Lube Oil Detrainment Sump Vent for Unit 1 Combustion Turbine	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
LO-DTR-CT2	Bearing Lube Oil Detrainment Sump Vent for Unit 2 Combustion Turbine	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
LO-DTR-CT3	Bearing Lube Oil Detrainment Sump Vent for Unit 3 Combustion Turbine	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
LO-DTR-CT4	Bearing Lube Oil Detrainment Sump Vent for Unit 4 Combustion Turbine	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09

Emission Sources - Maximum Allowable Emission Rates

LO-DTR-ST1	Bearing Lube Oil Detrainment Sump Vent for Steam Turbine 1	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
LO-DTR-ST2	Bearing Lube Oil Detrainment Sump Vent for Steam Turbine 2	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
EG2 (6)	Emergency Generator Diesel Engine (Catepillar-2937 hp)	NO_X	41.87	18.34
		CO	4.05	1.77
		VOC	1.13	0.49
		$PM/PM_{10}/PM_{2.5}$	0.57	0.25
		SO_2	1.10	0.48
		H_2SO_4	0.17	0.07
EG2-LUBE	Emergency Generator Diesel Engine Crankcase Vent (Catepillar-2937 hp)	VOC	0.13	0.57
		$PM/PM_{10}/PM_{2.5}$	0.13	0.11
EG2-DSLTK	Diesel Storage Tank (1200gal)	VOC	0.51	0.01
EG2-DSLFUG (5)	Diesel Piping Fugitives	VOC	< 0.01	< 0.01
SO-RSV-CT1	Seal Oil Reservoir Vent for Gas Turbine Generator 1	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
SO-RSV-CT2	Seal Oil Reservoir Vent for Gas Turbine Generator 2	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
SO-RSV-CT3	Seal Oil Reservoir Vent for Gas Turbine Generator 3	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
SO-RSV-CT4	Seal Oil Reservoir Vent for Gas Turbine Generator 4	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09
SO-RSV-ST1	Seal Oil Reservoir Vent for Steam Turbine Generator 1	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09

Emission Sources - Maximum Allowable Emission Rates

SO-RSV-ST2	Seal Oil Reservoir Vent for Steam Turbine Generator 2	VOC	0.04	0.09
		$PM/PM_{10}/PM_{2.5}$	0.04	0.09

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
H_2SO_4 - sulfuric acid
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Emergency Generator Diesel Engine limited to 876 hours of operation annually.

Date: February 13, 2012