Emission Sources - Maximum Allowable Emission Rates

Permit Number 39693 and N63

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)
Port Arthur I (PAI) - H_2/Cogeneration Facility				
SMR1 STK	SMR1 Reformer Furnace Stack (6)	NOx	81.00	
		CO	23.40	
		VOC	3.60	14.00
		PM	16.70	67.10
		PM_{10}	16.70	67.10
		$PM_{2.5}$	16.70	67.10
		SO_2	91.80	35.80
		NH_3	9.51	41.66
		NH_3 (6)	19.02	
GT6B STK	Gas Turbine Stack (GE F6B) (6)	NOx	19.60	
		NOx (6)	166.50	
		CO	33.30	
		CO (6)	166.50	
		VOC	3.17	1.20
		VOC (6)	27.00	
		PM	6.00	2.30
		PM_{10}	6.00	2.30
		$PM_{2.5}$	6.00	2.30
		SO_2	1.62	0.34

Emission Sources - Maximum Allowable Emission Rates

FLARE1	PA I Flare (pilots)	NOx	0.02	0.10
		CO	0.05	0.20
		VOC	0.03	0.14
		SO_2	<0.01	<0.01
	PA I Flare (6)	NOx	160.00	
		CO	1654.00	
		VOC	5.98	0.37
		SO_2	0.28	0.10
	PA I Shutdown Nitrogen Purge Venting	CO	367.52	0.75
		VOC	77.73	0.04
SMR1 STK, GT6B STK, and FLARE1	PA I CAP (6)	NOx		97.33
		CO		101.07
H2 VENT1	Hydrogen Vent	CO	36.30	2.10
PLTFUG1	PA1 Fugitives (5)	CO	2.20	8.70
		VOC	8.40	3.40
		NH_3	0.05	0.23
Port Arthur II (PAII) - H_2/Cogeneration Facility				
SMR2 STK	SMR2 Reformer Furnace Stack (6)	NOx	22.80	
		NOx (6)	100.50	
		CO	20.00	
		VOC	5.32	4.70
		PM	13.20	56.50
		PM_{10}	13.20	56.50
		$PM_{2.5}$	13.20	56.50
		SO_2	107.60	40.70
		NH_3	9.51	41.60
		NH_3 (6)	19.02	
GTS2STK	PAII Gas Turbine Stack (GE F7EA)	NOx	36.30	

Emission Sources - Maximum Allowable Emission Rates

		NOx (6)	166.50	
		CO	65.30	
		CO (6)	198.40	
		VOC	10.00	2.30
		VOC (6)	27.00	
		PM	9.66	4.90
		PM_{10}	9.66	4.90
		$PM_{2.5}$	9.66	4.90
		SO_2	2.96	1.20
HRSG STK	Heat Recovery Steam Generator (6)	NOx	22.60	
		NOx (6)	226.10	
		CO	32.50	
		CO (6)	560.00	
		VOC	7.66	13.7
		PM	7.06	18.8
		PM_{10}	7.06	18.8
		$PM_{2.5}$	7.06	18.8
		SO_2	144.00	41.70
		NH_3	7.25	31.74
		NH_3 (6)	14.50	
FLARE2	PAII Flare (pilots)	NOx	0.02	0.10
		CO	0.05	0.20
		VOC	0.03	0.14
		SO_2	<0.01	<0.01
	PAII Flare (6)	NOx	143.00	
		CO	1498.00	

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.74	0.10
		SO_2	0.39	0.10
	PA II Shutdown Nitrogen Purge Venting	CO	511.71	1.13
		VOC	8.73	<0.01
SMR2 STK, GTS2STK, HRSG STK, and FLARE2	PA II CAP (6)	NOx		87.40
		CO		89.04
SMR2 HPSV	SMR2 HP Steam Vent	MeOH	3.79	
		EtOH	0.38	
		NH_3	0.21	
HRSG SV	HRSG Steam Vent	MeOH	1.79	
		EtOH	0.18	
		NH_3	0.10	
125 SV	125-lb Steam Vent	MeOH	1.20	
		EtOH	0.12	
		NH_3	0.07	
SMR1 SV	SMR1 Steam Vent	MeOH	0.87	
		EtOH	0.09	
		NH_3	0.09	
SMR2 HPSV, HRSG SV, 125 SV, and SMR1 SV	Steam Vent Emission Cap	MeOH		3.20
		EtOH		1.70
		NH_3		1.00
		Amines		<1.00
SMR2 DEA VT	SMR2 De-aerator Vent	MeOH	0.54	2.30
		EtOH	0.06	0.30
		NH_3	0.04	0.20

Emission Sources - Maximum Allowable Emission Rates

HRSG DEA VT	HRSG De-aerator Vent	MeOH	0.32	1.40
		EtOH	0.04	0.20
		NH_3	0.02	0.10
SMR1 DEA VT	SMR1 De-aerator Vent	MeOH	0.27	1.20
		EtOH	0.03	0.20
		NH_3	0.07	0.30
CT2	PAII Cooling Tower	MeOH	0.32	0.10
		PM	2.30	10.10
		PM_{10}	2.30	10.10
		$PM_{2.5}$	2.30	10.10
		NH_3	0.16	<0.10
SMR2 H2 CT	SMR2 hydrogen Vent	CO	36.50	2.10
SMR TGBV	SMR2 Tail Gas Fuel Header Isolator Bleed Valve	MeOH	0.02	<0.01
		EtOH	<0.01	<0.01
		NH_3	<0.01	<0.01
SMR2 MIX TEE	MMR2 Mix Tee Startup Steam Vent	MeOH	0.03	<0.01
		EtOH	<0.01	<0.01
		NH_3	<0.01	<0.01
SMR2NGMIXT	SMR2 Natural Gas Mix Tee Vent	VOC	71.79	0.40
PAII ATM FL	SMR2 + HRSG Atmospheric Flash	MeOH	0.03	0.20
		EtOH	<0.01	<0.10
		NH_3	0.02	0.10

Emission Sources - Maximum Allowable Emission Rates

PAII INT BDN	SMR2 + HRSG Process Gas Boiler Intermittent Blowdown	MeOH	0.02	0.10
		EtOH	<0.01	<0.10
		NH_3	0.01	<0.10
PLT2FUG	PAII Plant Fugitives (5)	NOx	2.00	<0.01
		CO	2.50	8.80
		VOC	9.20	5.20
		NH_3	0.11	0.50
		Sulfur	<0.01	<0.01
NGISOBV	PAII Natural Gas Isolation Bleed Valve	VOC	47.70	0.10
		Sulfur	0.04	<0.01
SMR ID FAN SV	SMR2 ID Fan Turbine Inlet Steam Vent	MeOH	0.02	<0.01
		EtOH	<0.01	<0.01
		NH_3	<0.01	<0.01
STG 125 EXV	STG 125# Exhaust Warm Up Vent	MeOH	0.27	<0.10
		EtOH	0.03	<0.10
		NH_3	0.02	<0.10
STGGLANDV	STG Gland Condenser Vent	MeOH	0.02	0.10
		EtOH	<0.01	<0.10
		NH_3	<0.01	<0.10
STGSTARTV	STG Startup Vent	MeOH	7.73	0.10
		EtOH	0.80	<0.10
		NH_3	0.42	<0.10
GTG2 NGV	PAII GTG Natural Gas Vent	VOC	3.98	2.72
		Sulfur	<0.01	<0.10
SMR FANEDUC	SMR2 ID Fan Turbine Eductor Steam Vent	MeOH	0.01	<0.10
		EtOH	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

		NH_3	<0.01	<0.01
SMR IDFANSV	SMR2 ID Fan Turbine Startup Vent	MeOH	0.19	<0.10
		EtOH	0.02	<0.01
		NH_3	0.01	<0.01
GTG2 ISBDN	PAII GTG Inlet Strainer Blowdown	VOC	5.29	<0.10
		Sulfur	0.02	<0.01
GTG2FUELV1	GTG2 Fuel System Purge Vent 1	VOC	0.57	<0.01
		Sulfur	<0.01	<0.01
GTG2FUELV2	GTG2 Fuel System Purge Vent 2	VOC	0.57	<0.01
		Sulfur	<0.01	<0.01
GTG2FUELDBB	GTG2 Fuel Gas DB&B Vent	VOC	2.12	<0.01
		Sulfur	0.01	<0.01
GTGMANSUSV	GTG2 Manual Startup Purge Vent	VOC	144.50	0.30
		Sulfur	0.04	<0.01
HRSG RFGDBB	HRSG Fuel Gas DB&B Vent	CO	0.88	<0.01
		VOC	36.10	<0.10
		Sulfur	7.79	<0.01
HRSGIGNDBB	HRSG Ignition DB&B Vent	VOC	0.62	<0.01
		Sulfur	<0.01	<0.01
HRSGSUSV	HRSG Startup Steam Vent	MeOH	1.80	<0.10
		EtOH	0.18	<0.01
		NH_3	0.10	<0.01
HRSGINPRES	HRSG Inlet pressure Reduction Vent	CO	1.80	<0.01
		VOC	73.70	<0.10
		Sulfur	3.65	<0.01

Emission Sources - Maximum Allowable Emission Rates

FEEDPV	PAII Feed System Purge Vent	VOC	14.11	<0.10
		Sulfur	0.03	<0.01
PLTFUG1MSS	SMR1 Process & Unit Turnaround clear to Atmosphere	CO	0.27	0.01
		VOC	0.29	0.01
PLTFUG2MSS	SMR2 Process & Unit Turnaround clear to Atmosphere	CO	0.40	0.01
		VOC	<0.01	<0.01
INS1	Gas Fuel Line Clearing for MSS	VOC	0.01	0.01
INS2	Process Instrument Maintenance and Calibration and isolated pump and piping component opening for repair and maintenance (7)	CO	1.83	0.28
		VOC	<0.01	<0.01
		NH_3	0.10	<0.01
INS3	Water Washing of Small Equipment	VOC	1.00	0.25

(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
- 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
- NH_3 - ammonia
- MeOH - methanol
- EtOH - ethanol

(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) Sources where emissions include maintenance startup, shutdown, partial load operation and alternate and transitional operating modes and additional air contaminant-specific short-term emission limits applicable during these modes as defined in the Permit 39693 amendment application Section 6.12.5 representations approved August 18, 2006 and the Permit 39693 amendment representations approved June 26, 2012.
(7) Process Instrument Maintenance and Calibration is an inherently low emitting activity with INS2 emissions assumed at all times to be 0.0058 lbs/hr and 0.0029 tpy CO.

Date: February 6, 2020