ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM

November 12, 2025

SUBJECT: **Brunot Island Power LLC**
Brunot Island Generating Station
Brunot Island
Pittsburgh, PA 15233

RE: **Title V Operating Permit File No. 0056-OP25**

TO: JoAnn Truchan, P.E.
Program Manager, Engineering

FROM: Bernadette Lipari
Air Quality Engineer

FACILITY DESCRIPTION:

The Brunot Island Power LLC, Brunot Island Generating Station is a commercial electrical power generation facility. The source is composed of one (1) 22 MW base rating no. 2 fuel oil-fired simple cycle combustion turbine, and three (3) 63 MW base rating natural gas-fired combined cycle combustion turbines. Each combined cycle turbine is equipped with a heat recovery steam generator (HRSG) that is supplied with duct burners rated at 240 MMBtu. The simple cycle combustion turbine has no emission controls and the combined cycle units are equipped with selective catalytic reduction (SCR) and water injection for NO_X control. Additional emission units consist of one (1) 84,000 gallon-per-minute cooling tower, two (2) 765,810 gallon above-ground storage tanks (ASTs) for no. 2 fuel oil, and one (1) 20,500 gallon aqueous ammonia AST.

The facility is a major source of nitrogen oxides (NO_X) and carbon monoxide (CO) and a minor source of particulate matter, particulate matter < 10 microns in diameter (PM_{10}), particulate matter < 2.5 microns in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and volatile organic compounds (VOCs) emissions, and an area source of hazardous air pollutants (HAPs) as defined in section 2101.20 of Article XXI. The facility is also subject to the acid rain regulations and Cross-State Air Pollution Rule (CSAPR) requirements.

OPERATING PERMIT DESCRIPTION:

In the original October 31, 1995 Operating Permit Application, the facility requested higher emission limits for PM, NO_X & VOCs for units 1A, 1B & 1C. Units 1B and 1C were rendered inoperable in 2014. The present limits from operating permit #1065009-000-23600 are considered BACT for unit 1A and cannot be arbitrarily changed.

An annual emission rate of less than 100 tons per year was requested for sulfur oxides. This was requested because these units operate infrequently making testing arrangements difficult. Compliance with the 99 tpy emission limitation will be based on analysis (by the fuel supplier or Brunot Island Power, LLC) of the sulfur content of the fuel and records of the amount of fuel combusted. Since a 5% capacity factor is being applied to meet presumptive RACT III requirements, the annual sulfur oxides remain well below 99 tpy.

EMISSIONS SOURCES:
The facility consists of the following emission units:

Table 1 - Emission Unit Identification

I.D.	SOURCE DESCRIPTION	CONTROL DEVICE(S)	MAXIMUM CAPACITY	FUEL/RAW MATERIAL	STACK I.D.
1A	Combustion Turbine in Simple Cycle Mode	None	22 MW base - 300 × 10^6 Btu/hr	No. 2 Fuel Oil	S-007
2A	Combustion Turbine and HRSG in Combined Cycle Mode	Water injection with SCR	63 MW base - 918 × 10^6 Btu/hr	Natural Gas	S-001/2
2B	Combustion Turbine and HRSG in Combined Cycle Mode	Water injection with SCR	63 MW base - 918 × 10^6 Btu/hr	Natural Gas	S-003/4
3	Combustion Turbine and HRSG in Combined Cycle Mode	Water injection with SCR	63 MW base - 918 × 10^6 Btu/hr	Natural Gas	S-005/6
CT1	Multi-cell Cooling Tower	Mist eliminators	84,000 gpm	NA	CT-1
T001A	Aqueous Ammonia AST	Vapor balancing and bottom loading	20,500 gallons	NA	NA
T001 & T002	No.2 Fuel Oil ASTs	Conservation Vents	765,810 gallons (each)	No. 2 Fuel Oil	NA
1A-DS	Diesel Starter Engine	None	3.4 MMBtu/hr	No. 2 Fuel Oil	NA
FP1	Diesel Fire Pump	None	2.1 MMBtu/hr	No. 2 Fuel Oil	NA

PERMIT APPLICATION COMPONENTS:
1. Major Source Operating Permit application package, dated February 24, 2024.
2. Major Source Operating Permit administrative amendment application package, dated November 22, 2019.
3. Installation Permit #0056-I001a, issued March 5, 2001, amended August 1, 2001.
4. Installation Permit #0056-I001b, issued March 5, 2001, amended January 10, 2006.
5. Installation Permit #0056-I001c, issued March 5, 2001, amended January 11, 2006.
6. RACT Installation Permit #0056-I002, issued February 28, 2020.

METHOD OF DEMONSTRATING COMPLIANCE:
Continuing compliance with the emission limitations of this permit will be reasonably assured by continuous fuel flow monitors and CEMs for NO_X and CO on units 2A, 2B & 3, determination of fuel nitrogen and sulfur contents in 1A and SCR and water injection system monitoring in units 2A, 2B & 3, along with associated recordkeeping and reporting requirements. See the Major Source Operating Permit No. 0056-OP25 for the specific compliance methods, record keeping and reporting requirements for the facility.

EMISSIONS CALCULATIONS:

1A emissions:

1. Sulfur Dioxide Emissions

Brunot Island Power, LLC has agreed to a maximum sulfur content of the No. 2 fuel oil of 0.2%. Article XXI, §2104.10.a limits sulfur content in No. 2 fuel oil to 15 ppm (0.0015%). However, §2104.10.a.1 allows for use of fuel with a higher sulfur content if it was purchased and stored prior to September 1, 2020. The higher sulfur content is assumed in establishing potential emissions as a worst-case scenario. In accordance with the Article XXI definition of "allowable emissions," the related emission limits in units of lb/MMBtu, lb/hr, and tons/year are presented below:

No. 2 fuel oil – representative values:
Density @ 15 °C = 868 Kg/m^3 = 7.21 lb/gal
Gross calorific value = 140,556 Btu/gal = 19,446 Btu/lb

Emission limit =
(0.002 lb S/1 lb oil) × (64 lb SO_2/32 lb S) × (1 lb oil/19,446 Btu) × (1E+06 Btu/1 MMBtu) = 0.21 lb/MMBtu

Emission limit = (0.21 lb/MMBtu) × (300 MMBtu/hr) = 63.0 lb/hr

Emission limit =
(63.0 lb/hr) × (8,760 hr/yr) × (5% capacity factor) × (1 ton/2,000 lb) = 13.8 ton/year

2. Nitrogen Oxides Emissions

Since the NO_X Averaging Plan was terminated on April 1, 2022, the NO_X limit for the unit is 0.698 lb/MMBtu by RACT Order No. 214, condition 1.4. The PA Presumptive RACT III limit of a 5% capacity factor was used to calculate the annual NO_X emissions limit in the TVOP.

Emission limit = (0.698 lb/MMBtu) × (300 MMBtu/hr) = 209.4 lb/hr
Emission limit = (209.4 lb/hr) × (8,760 hr/yr) × (5% capacity factor) × (1 ton/2,000 lb) = 45.9 ton/year

3. Particulate Matter and PM_{10} Emissions

Emission limit = (0.005 lb/MMBtu) × (300 MMBtu/hr) = 1.5 lb/hr

Emission limit = (1.50 lb/hr) × (8,760 hr/yr) × (5% capacity factor) × (1 ton/2,000 lb) =
0.33 ton/year

4. Carbon Monoxide Emissions

Although there are no promulgated carbon monoxide emission limits for simple cycle combustion turbines listed in Article XXI, Brunot Island Power, LLC has agreed to accept a maximum carbon monoxide emissions limit of 50 ppm at 15% O_2. The CO limit was revised from 0.50 ppm to 50 ppm at 15% O_2 when the Title V permit amendment was issued on March 14, 2008. The 0.50 ppm value was from the initial operating permits issued in the early 1970s for this unit. An emissions test program conducted in February 2007 showed that measured carbon monoxide emissions from Unit 1A was approximately ten times higher than the existing permit limits. This

emission limit is similar to limits for newer simple cycle combustion turbines of similar capacity. The related emission limits in units of lb/hr and tons/year are presented below:

Please reference the U.S. EPA-approved, oxygen-based dry F-factor for fuel oil = 9,190 dscf/MMBtu (per U.S. EPA reference Method 19)

Emission limit = (50 ppmv) × (7.266E-08 lb/dscf /1 ppmv) × (9,190 dscf/MMBtu) × (20.9% ÷ (20.9% - 15%)) × (300 MMBtu/hr) = 35.5 lb/hr

Emission limit = (35.5 lb/hr) × (8,760 hr/yr) × (5% capacity factor) × (1 ton/2,000 lb) = 7.78 ton/year

5. Formaldehyde Emissions

No formaldehyde emission limits were included in the original operating permit issued in the early 1970s. The formaldehyde limits (0.080 lb/hr and 0.13 tons/yr), based on AP-42 emission factors, were small since fuel oil combustion generates less formaldehyde than natural gas combustion. Because of this, ACHD considers these emissions insignificant and has removed the formaldehyde limits for combustion turbine 1A.

6. VOC Emissions

Stack Exhaust = 616,667 acfm
Stack Exhaust temperature = 864 °F
Stack Exhaust moisture = 3.0% by volume
Stack Exhaust dry = 598,167 dacfm

1 mole @ 60 °F = 379 ft^3
V1/T1 = V2/T2
1mole @ 864 °F = (379)(460+864) ÷ (460+60) = 965 ft^3

Allowable VOC = 0.002% of stack gas volume as carbon:
(0.00002) × (616,667 acfm) = 12.33 acfm VOC = 0.0128 moles VOC
(0.0128 moles VOC/min) × (60) × (12) = 9.22 lbs/hr
(9.22 lbs/hr) × (8,760 hrs/yr) × (5% capacity factor) × (1 ton/2,000 lb) = 2.02 ton/year

The stack exhaust = 616,667 acfm. Allowable VOC = 0.002% on a wet basis. One mole equals 965 ft^3 at exhaust conditions, which gives 0.0128 moles VOC per minute. One mole of VOCs as carbon equals 12 pounds.

2A, 2B & 3 emissions:

Based on information from the stack test performed in the fall of 2002 and the retest on Unit 2B in 2003, the Department has revised the mid-load emission limits for VOC and CO consistent with data from those tests and included an additional 10% to account for process variation. Emission limits for formaldehyde were not revised. The installation permit (#0056-I001a) was revised and installation permit (#0056-I001b) was issued to incorporate these changes.

Brunot Island Power LLC requested that the permit conditions pertaining to warm startup be deleted and the times/durations for the cold and hot starts and shutdown be revised. The Department reviewed the May 9, 2003 letter and revised the conditions pertaining to startup from those in the originally issued permit (#0056-I001a) and incorporated the changes into the permit (#0056-I001b).

The short term emissions for PM of 6.7 lb/hr does not correspond to the emission factor of 0.015 lb/MMBtu. These numbers have been retained and carried through from the installation permit, IP #0056-I001, issued

on March 5, 2001. The annual emissions for VOC of 12 tons/year does not correspond to the short-term emissions of 3 lb/hr. These numbers have been retained and carried through from the installation permit IP #0056-I001 issued on March 5, 2001. Both of the above hourly emissions limits were from the manufacturer's specifications or the BACT analysis from installation permit, IP #0056-I001.

EMISSION CONTROLS:

The simple cycle combustion turbine has no emission controls. The three (3) combined cycle combustion turbines are equipped with water injection and selective catalytic reduction for control of nitrogen oxides. The cooling tower is equipped with mist eliminators for control of particulates.

TESTING REQUIREMENTS:

Units no. 2A, 2B & 3

Emissions testing shall be performed once every three (3) years for volatile organic compounds and formaldehyde, and annually to demonstrate compliance with the ammonia emissions limitation of 10 ppm and the corresponding ammonia lbs/hr and tons/yr emission limits.

Units no.1A

Emissions testing for NO_X shall be performed at least once during the term of the permit.

EMISSION SOURCES OF MINOR SIGNIFICANCE:

1. Aqueous Ammonia Above Ground Storage Tank (T-001A) – 20,500 gallons
2. Two (2) No. 2 Fuel Oil Above Ground Storage Tanks (T001 & T002) – 765,810 gallons (each)

REGULATORY APPLICABILITY:

1. **Article XXI, Requirements for Issuance:**
   The requirements of Article XXI, Parts B and C for the issuance of major source operating permits have been met for this facility. Article XXI, Part D, Part E & Part H will have the necessary sections addressed individually.

   §2105.48 (Areas Subject to §2105.40 through §2105.47): Brunot Island Power, LLC is located inside of the area specified in Article XXI, Section 2105.48.a. Therefore, the requirements of Article XXI, Sections §2105.40 through §2105.47, apply to this source.

2. **40 CFR PART 64, "Compliance Assurance Monitoring":**
   The requirements of 40 CFR Part 64, "Compliance Assurance Monitoring," were found to be applicable to this facility. CAM applies to NO_X on units 2A, 2B and 3 due to the presence of controls and the magnitude of emissions. The applicability of acid rain regulations to these units makes them exempt from CAM under section 64.2(b)(iii) of the rule.

3. **New Source Performance Standards (NSPS): 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines:**
   This subpart is not applicable to any of the four (4) combustion turbines because each unit was constructed prior to October 3, 1977, which is the applicability date of the subpart.

4. **New Source Performance Standards: 40 CFR 60, Subparts D and Da, Standards of Performance for Steam Generators:**
   Because the Heat Recovery Steam Generators (HRSGs) which are part of the combined cycle units (2A, 2B, and 3) are rated at less than 250 MMBtu/hr, this NSPS does not apply.

5. **National Emission Standards for Hazardous Air Pollutants: 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines:**
   The facility operates a 3.4 MMBtu/hr "black start" diesel starter engine and a 2.1 MMBtu/hr "fire pump" diesel engine that are subject to 40 CFR 63, Subpart ZZZZ.

6. **40 CFR 72 through 78, Acid Rain Requirements:**
   Unit 1A is not an affected unit under 40 CFR 72, subpart A, §72.6(b)(1). Acid rain regulations do not apply due to the turbines being simple cycle turbines that commenced operation prior to November 15, 1990. In addition, the unit is rated at 22 MW which is less than the 25MW applicability threshold.

   Units 2A, 2B & 3 are affected units under 40 CFR 72, subpart A, §72.6(a)(2).

7. **Prevention of Significant Deterioration (PSD):**
   The Department issued a PSD permit to Brunot Island Power, LLC for installation/reactivation of heat recovery steam generators (HRSGs) on Units 2A, 2B and 3. With installation of the HRSGs and associated duct burners, the units became combined cycle units. The conditions of the PSD permit (0056-I001a) have been incorporated into the TVOP. Conditions relating to the operation of the units on natural gas only and in simple cycle mode have not been incorporated because they are no longer applicable after startup of the units in combined cycle mode.

   Revisions to the PSD Permit to accommodate changes in requirements for startup conditions and revised emission limits for operation during 60% to 90% of full load are being published for public comment concurrently with this TVOP. The language in this TVOP reflects these changes.

8. **CSAPR NO_X and SO_2 Trading Programs for Units 2A, 2B, and 3 (40 CFR Part 97 Subparts AAAAA, BBBBB, and CCCCC):**
   The permittee shall comply with all requirements of 40 CFR PART 97 (relating to the Cross-State Air Pollution Rule (CSAPR) NO_X and SO_2 Emissions Programs). The permittee is subject to the standard requirements of 40 CFR §97.406, 40 CFR §97.506, and 40 CFR §97.606.

9. **Emissions Inventory:**
   This facility is required to provide annual Emissions Inventory reports per §2108.01.e of Article XXI because this facility has the potential to emit more than 25 tpy of VOC.

10. **Risk Management Program (§2104.08, 40 CFR Part 68):**
    The aqueous ammonia storage tanks are not subject to the Risk Management Program requirements of 40 CFR Part 68 because the material they store (19% aqueous ammonia) is not a listed regulated material. Therefore, the requirements of Part 68 are not applicable to this source. However, should the facility, as defined in 40 CFR Part 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in Part 68.10, and shall certify compliance with the requirements of Part 68 as part of the facility's annual compliance certification.

11. **Greenhouse Gas Reporting (40 CFR Part 98):**
    There are presently no Title V applicable requirements for greenhouse gases. Should the facility exceed 25,000 metric tons of CO_2e in any 12-month period, the facility would have to submit reports in accordance with 40 CFR Part 98.

12. **Environmental Justice**:
Brunot Island Power is located in an environmental justice (EJ) area, defined by the Pennsylvania DEP as "any census tract where 20 percent or more individuals live at or below the federal poverty line, and/or 30 percent or more of the population identifies as a non-white minority, based on data from the U.S. Census Bureau and the federal guidelines for poverty". Because this facility is an existing source, alternative site location is not possible. The facility is located on an island on the Ohio River with no other residents on the island. The operating permit contains all testing, monitoring, recordkeeping, and reporting requirements (as required under §70.6(a)(3)).

13. **PA Code §129.99; RACT II & PA Code §129.112; RACT III Presumptive RACT Requirements:**
Units 1A, 2A, 2B and 3 were subject to the PA Code §129.99 case-by-case RACT emission limitations for NO_X and VOC under RACT II. RACT II reduced VOC emissions to below the 50 ton/yr threshold and thus the current RACT III requirements only apply to NO_X. The permittee has elected to utilize a capacity factor to demonstrate compliance with the RACT III NO_X presumptive requirements under 25 PA Code §129.112(c)(9)(ii) for Combustion Turbine 1A. The CCCT unit (CTs 2A, 2B, & 3) is able to meet the 25 PA Code §129.112(g)(2)(ii)(A) & (B) Presumptive RACT III NO_X requirements. The table below shows there is no backsliding from RACT II to RACT III.

Table 2 – RACT II & RACT III Requirements:

Source ID/ Description	Rating	NO_X PTE (TPY) RACT II	VOC PTE (TPY) RACT II	RACT II NO_X Averaging Requirement (25 Pa Code Section 129.98)	Presumptive RACT II Requirement (25 Pa Code Section 129.97)	NO_X PTE (TPY) RACT III	VOC PTE (TPY) RACT III	Presumptive RACT III Requirement (25 Pa Code Section 129.112)
1A No. 2 fuel oil-fired Simple Cycle Combustion Turbine	300 MMBtu/ hr	175	6.54	0.37 lb/MMBtu (averaged over 30 days, compliance through averaging plan); 0.698 lb/MMBtu (at all times); 175 tpy; 36% capacity factor	Emissions of nitrogen oxides from unit 1A shall not exceed 96 ppmvd @ 15% oxygen (0.370 lb/MMBtu); §129.97(g)(2)(iv)(B) Emissions of volatile organic compounds from unit 1A shall not exceed 9 ppmvd (as propane) @ 15% oxygen; §129.97(g)(2)(iv)(D)	45.9	2.0	The capacity factor of Unit 1A shall be less than 5% in any consecutive 12-month period; 0.698 lb/MMBtu (at all times) 45.9 tpy; 5% capacity factor §129.112(c)(9)(ii) Emissions of volatile organic compounds from unit 1A shall not exceed 9 ppmvd (as propane) @ 15% oxygen;

Source ID/ Description	Rating	NO_X PTE (TPY) RACT II	VOC PTE (TPY) RACT II	RACT II NO_X Averaging Requirement (25 Pa Code Section 129.98)	Presumptive RACT II Requirement (25 Pa Code Section 129.97)	NO_X PTE (TPY) RACT III	VOC PTE (TPY) RACT III	Presumptive RACT III Requirement (25 Pa Code Section 129.112)
								§129.112(g)(2)(v)(D)
2A, 2B, & 3 Natural gas-fired Combined Cycle Combustion Turbines	678 MMBtu/hr (each unit) w/240 MMBtu/hr HRSG (each unit)	51.7 (each unit)	12.0 (each unit)	0.013 lb/MMBtu (≥60% of full load); 0.16 lb/MMBtu (<60% of full load, averaged over 30 days, compliance through averaging plan); 51.7 tpy (each unit)	Emissions of nitrogen oxides from unit 2A, 2B and 3 shall not exceed 42 ppmvd @ 15% oxygen; §129.97(g)(2)(i)(A) Emissions of volatile organic compounds from unit 2A, 2B and 3 shall not exceed 5 ppmvd (as propane) @ 15% oxygen. §129.97(g)(2)(i)(C)	51.7 (each unit)	12.0 (each unit)	0.013 lb/MMBtu (≥60% of full load); 0.16 lb/MMBtu (<60% of full load, averaged over 30 days); 51.7 tpy (each unit) Emissions of nitrogen oxides from unit 2A, 2B and 3 shall not exceed 42 ppmvd @ 15% oxygen; §129.112(g)(2)(ii)(A) Emissions of volatile organic compounds from unit 2A, 2B and 3 shall not exceed 5 ppmvd (as propane) @ 15% oxygen; §129.112(g)(2)(ii)(B)

POTENTIAL EMISSION SUMMARY:

Table 3 – Emissions Summary Unit 1A:

Pollutant	lbs/MMBtu or ppm	lbs/hr	tons/yr[1]	Basis
PM	0.005	1.50	0.33	OP #1065009-000-23600; 5% Capacity Factor
PM_{10}	0.005	1.50	0.33	OP #1065009-000-23600; 5% Capacity Factor
$PM_{2.5}$	0.005	1.50	0.33	OP #1065009-000-23600; 5% Capacity Factor
NO_X	0.698	209.4	45.9	RACT Order No. 214, condition 1.4; 25 Pa. Code §129.112(c)(9)(ii), 5% Capacity Factor; and IP #0056-I002
CO	50 ppm[2]	35.5	7.77	OP #0056a; 5% Capacity Factor
SO_2	0.21[2]	63.0	13.8	OP #0056a; 5% Capacity Factor
VOC	9.0 ppm	9.22[3]	2.02	25 Pa. Code §129.97(g)(2)(iv)(D) ; 25 Pa. Code §129.112(g)(2)(v)(D), 5% Capacity Factor; and IP #0056-I002

[1] A year is defined as any 12 consecutive months.
[2] OP #0056a, issued March 14, 2008.
[3] 0.002% of stack gas volume as carbon; OP #0056, issued February 16, 2006.

Table 4 – Emissions Summary Units 2A, 2B & 3 (each):

Pollutant	lbs/MMBtu	ppm $_{vd}$	Each Unit lbs/hr	Each Unit tons/yr[1]	Basis
PM[2]	0.015		6.7	30.0	IP-0056-I001a
PM_{10}[2]	0.015		6.7	30.0	IP-0056-I001a
$PM_{2.5}$	0.015		6.7	30.0	IP-0056-I001a
NO_X	0.129	3.5[3]	11.8[4]	51.7	IP-0056-I001a
CO	0.044		40[5]/60[6]	175	IP-0056-I001b
SO_2	0.00286		2.6	11.5	IP-0056-I001a
VOC	0.003		3.0	12.0	IP-0056-I001b
Formaldehyde	--		0.64[5]/1.32[6]	2.8	IP-0056-I001a
Ammonia	0.0152		14.0	61.3	IP-0056-I001a

[1] A year is defined as any 12 consecutive months.
[2] PM and PM_{10} limits are for the filterable portion.
[3] @15% O_2 during any three-hour time period at or above 60% of full load for NO_X.
[4] Based on a rolling, three-hour average.
[5] Emissions at 90 - 100% full load.
[6] Emissions at less than 90% full load.

Table 5 – Emissions Summary Cooling Tower:

Pollutant	lbs/day	tons/yr[a]	Basis
PM	53.52	9.76	IP-0056-I001a
PM_{10}	53.52	9.76	IP-0056-I001a
$PM_{2.5}$	53.52	9.76	IP-0056-I001a

Table 6 – Emissions Summary Diesel Starter Engine:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tons/yr)[1]
PM	0.95	0.24
PM_{10}	0.95	0.24
$PM_{2.5}$	0.95	0.24
NO_X	14.99	3.75
CO	3.23	0.81
SO_2	0.99	0.25
VOC	1.19	0.30

[1] A year is defined as any 12 consecutive months. Based on 500 hours per year.

Table 7 – Emissions Summary Fire Pump Engine:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tons/yr)[1]
PM	0.59	0.15
PM_{10}	0.59	0.15
$PM_{2.5}$	0.59	0.15
NO_X	9.26	2.32
CO	1.99	0.50
SO_2	0.61	0.15
VOC	0.74	0.18

[1] A year is defined as any 12 consecutive months. Based on 500 hours per year.

Table 8 – Emissions Summary Combined Facility Allowable Emissions:

Pollutant	lbs/hr	tons/yr[1]
PM	25.37	98.51
PM_{10}	25.37	98.51
$PM_{2.5}$	25.37	98.51
NO_X	269.06[2]	206.97
CO	160.73[3]	534.68
SO_2	72.40	48.36
VOC	20.15[3]	438.50
HAPs	3.30	12.34
Formaldehyde	2.01[3]	8.43
Ammonia	42.0	183.96

[1] A year is defined as any consecutive 12-month period. Annual emissions include emissions during startup and shutdown. Operation of unit 1A is limited to 5% of full annual capacity.
[2] @15% O_2 during any three-hour time period at or above 60% of full load for NO_X.
[3] 90% to 100% of full load.

RECOMMENDATION:

All applicable Federal, State, and County regulations have been addressed in the permit application. The Title V Operating Permit for the Brunot Island Power, LLC facility should be approved with the emission limitations, terms and conditions in Permit #0040-OP25.

APPENDIX A

Emission Unit Data

Emission Unit Data

Each turbine

Unit:	Simple cycle combustion turbines
I.D.:	1A
Make:	General Electric
Model	5000N
Fuel:	No.2 fuel oil
Sulfur content:	0.2% maximum by weight
Rating:	22 MW - 300 × 10^6 Btu/hr at HHV
Capacity factor:	5%
Controls:	None

Each turbine

Unit:	Combined cycle combustion turbines
I.D.:	2A, 2B & 3
Make:	General Electric
Model	Frame 7000-B
Fuel:	Natural gas only
Rating:	50.5 MW - 918 × 10^6 Btu/hr at HHV (Combustion Turbine and HSRG)
Exhaust:	HRS with 240 MMBtu/hr duct burners
Controls:	Water injection with SCR
Instrumentation:	CEMs for NO_X, CO & O_2, continuous exhaust gas flow & fuel flow monitors

Cooling tower

Process Description:	One multi-cell evaporative cooling tower
No. of cells:	4
Facility ID:	CT-1
Coolant:	Water
Control Device(s):	Mist eliminators (limit drift to 0.0005% of circulating water flow)
Capacity:	84,000 gallon per minute
Max. TDS:	3,327 ppm

No.2 fuel oil tanks

Process Description:	Two (2) 765,810 gallon ASTs and five (5) 1,637,908 gallon ASTs
Facility ID:	T001 - T007
Contents:	No.2 fuel oil
Control Device(s):	Conservation vents

Ammonia tank

Process Description:	One 20,500 gallon storage tank
Facility ID:	T001A
Contents:	Aqueous Ammonia
Control Device(s):	Vapor balancing and bottom loading

Diesel Starter Engine

Process Description:	One Diesel Starter Engine for simple cycle combustion turbines
Facility ID:	1A-DS
Fuel:	No. 2 fuel oil
Rating:	3.4 MMBtu/hr
Control Device(s):	None

Diesel Fire Pump

Process Description:	One Diesel Fire Pump
Facility ID:	FP1
Fuel:	No. 2 fuel oil
Rating:	2.1 MMBtu/hr
Control Device(s):	None