UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

JUL - 8 2016

Mr. Maxwell George
Environmental Affairs Manager
Virgin Islands Water and Power Authority
P.O. Box 1450
St. Thomas, U.S. Virgin Islands 00804

Re: Final Significant Modification-Prevention Significant Deterioration (PSD) Permits- Continuous Opacity Monitors (COMs)-Virgin Islands Water and Power Authority's (VIWAPA) -St. Thomas and St. Croix

Dear Mr. George:

On March 18, 2015, the Region 2 Office of the U.S. Environmental Protection Agency (EPA) received VIWAPA's letter and a consolidated briefing package requesting multiple changes to the St. Thomas permits (STT) and one change to the St. Croix permits (STX). VIWAPA made its initial request on October, 21, 2014, provided additional information on January 30, 2015 and during a meeting on February 5, 2015. The requests are related to: 1) Sulfuric Acid Mist emission measurement and limit for the Combustion Turbine Unit 23 (STT); 2) Particulate matter emission limit for the Combustion Turbine Unit 18 (STT); 3) Volatile Organic Compound emission limit for Combustion Turbine Unit 18 (STT); 4) Removal of Continuous Opacity Monitoring requirements from multiple St. Thomas and St. Croix units and, 5) PSD non-applicability analyses for installing two duct burners (STT). Today's final permit modifications cover only the request to remove conditions requiring that VIWAPA operate COMs on all the PSD permitted combustion turbines and Heat Recovery Steam Generators (HRSG).

On March 31, 2016, EPA issued a preliminary determination, subject to public review, to approve the modifications to the multiple PSD permits for the St. Thomas and St. Croix plants. No comments were submitted to EPA during the 30-day public review period, which commenced upon publication of EPA's preliminary determination in the *Virgin Islands Daily News* on April 13, 2016, and expired on May 12, 2016. As such, no changes have been made from the draft modified PSD permits issued to VIWAPA on March 31, 2016, to the final permits that are being issued today. This letter and its enclosures represent EPA's final permit decision. A project description and summary of the control technologies to be used are provided in Enclosure I. The permit conditions are delineated in Enclosure II. This final permit decision becomes effective today. Since no comments were received during the public comment period, this permit may not be challenged under the Consolidated Permit Regulations, codified at 40 CFR Part 124, that apply to EPA's processing of this permit decision and no judicial review is available. Notice of the Agency's final action with respect to this permit will be published in the Federal Register. Under Section 307(b) of the Act, this final Agency action shall not be subject to judicial review in civil or criminal proceedings for enforcement.

If you have any questions regarding this letter, please call Mr. Steven C. Riva, Chief, Permitting Section, Air Programs Branch, at (212) 637-4074.

Sincerely,

John Filippelli, Director
Clean Air and Sustainability Division

Enclosures

cc: Verline Marcellin, VIDPNR
Angela Arnold, VIDPNR
Michael Lukey, ARCADIS

ENCLOSURE I
VIRGIN ISLANDS WATER AND POWER AUTHORITY
Krum Bay-ST. THOMAS
Final Modified Permit-Units 15, 18 and 22- July, 2016

PROJECT DESCRIPTION

Today's (June, 2016) Revision

The Virgin Islands Water and Power Authority (VIWAPA) is requesting that EPA modify the existing permits for the Combustion Turbine Units 15, 18 and 22 located in St. Thomas. Today's modification will remove the requirements that VIWAPA operate Continuous Opacity Monitors on Units 15, 18, 22 and Heat Recovery Steam Generator (HRSG) Unit 21 (for Combustion Turbines 15 and 18) and instead comply with the State Implementation Plan's opacity requirements with EPA's Method 9 and 22. Also, in today's action EPA is modifying the permit to update all the addresses where the reports should be submitted.

Language of September 2013 Revision

The Virgin Islands Water and Power Authority (VIWAPA) is requesting that EPA amend the existing consolidated final permit issued on June 18, 2007, for Units 15, 18 and 22 located in St. Thomas. Today's amendment allows Unit 18 to switch from steam injection to water injection control for the nitrogen oxides. There is no revision made to any other units today VIWAPA is requesting that it be allowed to replace steam injection system with a water injection system to control NOx at its Combustion Turbine Unit 18. This request is made because VIWAPA has been experiencing operational problems in the boilers and the corrosion problems in its Heat Recovery Steam Generator at this location. The other Units at this location use water injection system to control NOx.

Language of February 2007 Revision

The Virgin Islands Water and Power Authority (VIWAPA) is requesting that EPA revise the existing PSD permits for Units 15, 18 and 22 located at Krum Bay Plant in St. Thomas. VIWAPA requested the revision because its sole supplier of fuel on the Island can no longer guarantee fuel oil with a nitrogen content less than 1000 ppm by weight. While VIWAPA's permit, except for Unit 22, did not limit the nitrogen content, the units were effectively limited to 150 ppmw (0.015%) in order to meet the NOx limit in the permit. VIWAPA therefore requested a new nitrogen content limit up to 1000 ppmw (0.1%) (Note: The fuel's sulfur content remains unchanged at 0.2%). This change will also result in increasing the nitrogen oxide emission limits in all three PSD units. Further, VIWAPA agrees not to use duct burners in the Heat Recovery Steam Generator (HRSG). Currently, VIWAPA operates eight Units at this site. In addition to the PSD affected Units 15, 18 and 22, VIWAPA operates a PSD affected unit, Unit 23, as well as Units 11, 12, 13 and 14 which are not PSD affected units but operate pursuant to the Virgin Islands Department of Natural Resources permits. VIWAPA retired and dismantled Units 9 and

10 a few years ago.

Units 15, 18 and 22 (revised in Sept 2007 action)
EPA is revising these permits that will allow VIWAPA to use No. 2 fuel oil with a maximum fuel nitrogen content of 1000 ppm by weight. This change will result in the limits for nitrogen oxide emissions as follows:

Unit 15-a 23 MW General Electric (GE) Frame 5P, No. 2 oil-fired gas turbine which was installed in1981. The NOx emission limit will change from 69 lbs/hr up to115 lbs/hr.

Unit 18- a 23 MW GE frame 5PA, No. 2 oil-fired gas turbine which was installed in 1992. The NOx emission limit will change from 55 lbs/hr up to103 lbs/hr.

Unit 22-a 24 MW Pratt and Whitney FT8, No. 2 oil fired gas turbine, which was installed in 2002. The NOx emission limit will change from 42 lbs/hr up to 77 lbs/hr.

A Heat Recovery Steam Generator- Unfired- installed in 1993 (exhaust gases from Units 15 and 18 are ducted to this unfired HRSG)

Units 11, 12, 13, 14 and 23

(No changes due to today's action-these units are listed for information purposes only)

Unit 11-a 18 MW residual oil fired steam boiler installed in 1968

Unit 12-a 15.1 MW GE Frame 5LA, No. 2 oil fired turbine installed in 1970

Unit 13- a 35 MW residual oil fired steam boiler installed in 1970

Unit 14- a 15.1 MW GE Frame 5LA, No. 2 oil fired turbine installed in 1972

Unit 23- a 39 MW GE Frame 6, No. 2 oil fired turbine installed in 2004

Units 15, 18, and 22 at this site are PSD sources with potential emissions of criteria pollutants in excess of 100 tons per year (TPY). Each unit was issued a PSD permit prior to the present action. All these units are PSD affected for oxides of nitrogen (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter less than 10 microns (PM_{10}), and volatile organic compounds (VOC). The potential emissions from these units are as follows.

POLLUTANT	UNITS 15 and 18	UNIT 22
	(tons/year)	(tons/year)
Nitrogen Oxides (NO_x)	Revised from 459 to 809	Revised from 184 to 336
Sulfur Dioxide (SO_2)	594	228
Carbon Monoxide (CO)	252 @ 100% load	149
Particulate matter less than 10 microns (PM_{10})	44	99
Volatile Organic Compounds (VOC)	14 @ 100% load	45

VIWAPA employs Best Available Control Technology to control the pollutants described above. NO_x emissions shall be controlled through the use of water or steam injection. SO_2 and PM_{10} emissions will be controlled through the use of low sulfur distillate fuel oil. CO and VOC emissions will be controlled by implementing good combustion practices and performing intensive maintenance.

VIWAPA St. Thomas Air Quality Analysis (ug/m3)

	Net change in impact	EPA's Sign. Impact Level	EPA's Monitor-ing de minimis Level	Modeled Cumulative Air Impact	Measured Background	Cum. Model + background	Modeled Increment	PSD Increment	NAAQS
NO2									
Annual	4.3	1	14	57	8	65	15	25	100

1. National Ambient Air Quality Standard is the EPA air quality standard for public health.

2. The Significant Impact Level is a fraction of the NAAQS and is used by EPA to determine whether a cumulative modeling analysis is required.

3. The Monitoring de minimis Level is used by EPA to determine whether preconstruction ambient air quality monitoring is required. In this case, it was not required for the purpose of preconstruction concentrations. However, existing monitored background data measured in Puerto Rico site was obtained. This background concentration was added to the total modeled concentration modeled impact in order to determine a total concentration for comparison to the NAAQS.

Air Quality Analysis in St. John National Park - Class I Area

Pollutant Averaging Period	Net Change Impact	EPA's Significant Impact Level	Increment & NAAQS Required?
NO_2 Annual	0.004	0.1	No

ENCLOSURE II

Virgin Islands Water and Power Authority (VIWAPA)
Krum Bay Plant, St. Thomas
Final Modified Permit- July, 2016
Units 15 and 18

The electric power generating units at the VIWAPA St. Thomas facility, as described in Enclosure I, are subject to the following conditions:

I. EMISSION LIMITATIONS AND TESTING REQUIREMENTS:

A. Unit #15 - 23 MW GE Frame 5 (Model PG5341)

1. The total fuel usage for Unit #15 shall not exceed 17,410,000 gallons during any period of 365 consecutive days. Daily compliance shall be determined by adding the amount of fuel-oil used during each calendar day to the total quantity of the fuel-oil used in the preceding 364 calendar days.

2. The maximum heat input shall not exceed 310 million British thermal units per hour (MMBtu/hr). Unit #15 is limited to a maximum fuel consumption rate of 2,352 gallons per hour.

3 a. Operation of Unit #15 at low-loads (less than 25% capacity) cannot exceed 17 percent of the total annual operating time during a rolling 12-month period.

b.Operation of Unit #15 is allowed in a simple or a combined cycle mode. While operating in a combined cycle mode, the Heat Recovery Steam Generator (HRSG) shall be unfired.

c.The type of fuel is limited to No. 2 fuel oil or distillate fuel oil with a sulfur content of no more than 0.2% sulfur by weight and a nitrogen content of no more than 0.10% nitrogen by weight.

d.Tests for percent sulfur in fuel shall be conducted using testing methods established in 40 CFR 60.335. The test for nitrogen in fuel oil can be any one of the ASTM methods from ASTM D6366-99, D4629-02, or D5762-02. A fuel sample shall be drawn daily from the day or the holding tank that supplies fuel oil to this unit.

4. **Oxides of Nitrogen (NO_x) Emission Limitations**:

a. BACT is the use of water injection to control NO_x emissions. VIWAPA must use water injection at all times except when operating at low load (less than 25% capacity) as reserve.

b.NO_x Emission Limits (measured as NO_2)

Operating above low load-
When operating above low load, the concentration of NOx in the exhaust gas shall not exceed by volume (ppmdv), on a dry basis, corrected to 15% oxygen (as determined by continuous emissions monitoring and stack testing) on an hourly average basis as follows:

NOx (ppm) = 55, when fuel oil's nitrogen content is 150 ppm or below; or

NOx (ppm) = 55 + [((N/10,000)-0.015) x 470.59], where N is the fuel oil's nitrogen content in ppm and it is above 150 ppm

The NOx concentration value obtained from this equation then shall be used in the equation in 40 CFR 60, Appendix A, Method 19 to calculate the pounds per hour NOx emission limit for that specific nitrogen content of the fuel oil. VIWAPA shall comply with this pounds per hour emission limit when fuel nitrogen content is lower than 1000 ppmw and is operating the unit above low load. However, in no event, including operating at 1000 ppmw nitrogen in fuel, shall VIWAPA exceed 115 lbs/hr. Further, while operating this unit and Unit 18 in a combined cycle mode (with unfired HRSG), the NOx emissions shall not exceed 218 lbs/hr.

Operating at low load-
When operating at low load, NOx emissions shall not exceed 115 lbs/hr; while operating this unit and Unit 18 in a combined cycle mode (with unfired HRSG), the NOx emissions shall not exceed 218 lbs/hr.

c. The compliance with NOx emissions on an hourly average basis shall be determined as follows: VIWAPA shall analyze the nitrogen content of the fuel oil for each day when the NOx CEM reading exceeded 55 ppm (15% oxygen dry) hourly average for any hour during the day when this turbine was operating. The analyses shall be done in accordance with condition (I)(A)(3)(d). The nitrogen content of the fuel oil in ppm shall be used to calculate the maximum allowable hourly NOx emissions using the equations specified in (I)(A)(4)(b) and shall remain in effect for the whole day for which the sample was taken. If the NOx

CEM reading on an hourly average does not exceed 55 ppm during the entire day, a fuel analysis for nitrogen is not required for that day. VIWAPA shall also obtain averages of the measured nitrogen oxide concentrations (in ppmdv) and lbs/hr rate for every hour.

d.The water-to-fuel ratio for various load conditions will be established during the initial performance testing for NOx and reestablished or verified during any subsequent testing. The water-to-fuel ratio values contained in the initial performance test reports required to be submitted to EPA must become enforceable condition of this permit. VIWAPA shall apply to Virgin Islands Department of Planning and Natural Resources to incorporate the water-to-fuel ratios into VIWAPA's operating permit.

5. **Sulfur Dioxide (SO_2) Emission Limitations:**

While operating in a simple or combined cycle mode, SO_2 emissions shall not exceed 66.8 lbs/hr. While operating in a combined cycle mode with Unit 18, SO_2 emissions shall not exceed 135.5 lbs/hr. The emission rate of SO_2 from each mode of operation shall be determined using EPA RM 20 (40 CFR §60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average SO_2 emission rate of these three test runs. See Section V.A. for details on testing requirements.

6. **Carbon Monoxide (CO) Emission Limitations:**

a. While operating in a simple or combined cycle mode, CO emissions shall not exceed 13 lbs/hr when operating at base-load, or 405 lbs/hr when operating at low-load. While operating in a combined cycle mode with Unit 18, CO emissions shall not exceed 68 lbs/hr at base-load and 729 lbs/hr at low-load. The CO emission rate shall be tested while operating both in the simple and combined-cycle modes using EPA RM 10 (40 CFR §60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average CO emission rate of these three test runs. See Section V.A. for details on testing requirements.

b. While operating in a simple or combined cycle mode, CO emissions shall not exceed the following concentrations at various percent load levels, corrected to 15% oxygen, as determined by continuous emission monitoring. While both Units 15 and 18 operating in a combined cycle mode, the higher concentration

limit of the two will apply. Percent load will be determined based on the amount of fuel-oil fired.

PERCENT LOAD	CONCENTRATION OF CO (ppmdv @ 15% O_2)
0-24	1618
25-49	1145
50-74	332
75-99	88
100	28

7. **Particulate Matter/PM_{10}/Beryllium Emission Limitations:**

a. While operating in a simple or combined cycle mode, PM_{10} emissions shall not exceed 5.0 lbs/hr. While operating in a combined cycle mode with Unit 18, PM_{10} emissions shall not exceed 10 lbs/hr.

b. While operating in a simple or combined cycle mode, Beryllium emissions shall not exceed 9E-4 lbs/hr. While operating in a combined cycle mode with Unit 18, Beryllium emissions shall not exceed 18E-4 lbs/hr.

c. The emission rates of PM/PM_{10} and Beryllium shall be determined using EPA RM 5, Method 201/201A (40 CFR §51, Appendix M), and EPA RM 104, respectively. These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average emission rate of these three test runs. See Section V.A. for details on testing requirements.

8. **Volatile Organic Compounds (VOC) Emission Limitations:**

a. While operating in a simple or combined cycle mode, VOC emissions, measured as carbon, shall not exceed 2.0 lbs/hr when operating at base-load, or 79 lbs/hr when operating at low-load. While operating in a combined cycle mode with Unit 18, VOC emissions shall not exceed 4 lbs/hr at base-load and 146 lbs/hr at low-load. The VOC emission rate shall be tested while operating both in the simple and combined-cycle modes using EPA RM 25A (40 CFR §60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average VOC

emission rate of these three test runs. See Section V.A. for details on testing requirements.

b. While operating in a simple or combined cycle mode, VOC emissions shall not exceed the following concentrations at various percent load levels, corrected to 15% oxygen. While both Units 15 and 18 operating in a combined cycle mode, the higher concentration limit of the two will apply. Percent load will be determined based on the amount of fuel-oil fired.

PERCENT LOAD	CONCENTRATION OF VOC (ppmdv @ 15% O_2)
0-24	550
25-49	251
50-74	23
75-99	5
100	4

c. EPA reserves the right to require continuous emission monitoring for VOC in the future.

9. **Opacity Limitations:**

Based on the procedures in 40 CFR Part 60, Appendix A, Method 9, the Permittee shall not discharge into the atmosphere any air contaminants with opacity greater than 17 percent except for 3 minutes in any consecutive 30-minute period during which 40 percent shall not be exceeded.

Monitoring and Corrective Action: The Permittee shall conduct daily visual emissions inspections when the units are operating during daylight hours. Visual inspections shall consist of a visual observation of each stack and determination of visible emissions using 40 CFR Part 60, Appendix A-Method 22. If any visible emissions are observed, the Permittee shall do the following:

Within four hours of observing visible emissions, the Permittee shall conduct an opacity test using a certified opacity reader in accordance with Method 9. If the certified visible emissions reading exceeds the 17 percent opacity limit referenced above, then permittee shall verify that the equipment and/or control device causing the visible emissions or opacity is operating according to the manufacturer specifications. If the equipment or control device is not operating properly, the Permittee shall take a corrective action immediately to eliminate the opacity exceedance. In the event that the exceedance of the 17% opacity standard is not eliminated following immediate implementation of the corrective action, the Permittee shall continue to take corrective actions

until the permittee has successfully corrected the opacity problem.

After an initial corrective action is taken, the Permittee shall perform an opacity check via a certified opacity reader in accordance with Method 9 within 24 hours. Such test shall be conducted each day until the permittee has successfully corrected the opacity problem.

Recordkeeping: The Permittee shall maintain records of the visible emissions readings under Method 22 and any opacity tests/inspections under Method 9. If visible emissions or opacity are observed, then records of those readings and all corrective actions shall be maintained.

Reporting: The Permittee shall report any exceedance of the 17 percent opacity limit in the quarterly report. If no exceedance of this permit term occurs, a statement as such shall be included in the quarterly report.

B. **Unit #18 - 23 MW GE Frame 5 (Model PG5371)**

1. The total fuel usage for Unit #18 shall not exceed 18,223,600 gallons during any period of 365 consecutive days. Daily compliance shall be determined by adding the amount of fuel-oil used during each calendar day to the total quantity of the fuel-oil used in the preceding 364 calendar days.

2. The maximum heat input shall not exceed 323 MMBtu/hr. Unit #18 is limited to a maximum fuel consumption rate of 2,454 gals/hr.

3. Operation of Unit #18 at low-loads (less than 25% capacity) cannot exceed 17 percent of the total annual operating time during a rolling 12-month period.

   Operation of Unit #18 is allowed in a simple or a combined cycle mode. While operating in a combined cycle mode, the Heat Recovery Steam Generator (HRSG) shall be unfired.

   The type of fuel is limited to No. 2 fuel oil or distillate fuel oil with a sulfur content of no more than 0.2% sulfur by weight and a nitrogen content of no more than 0.10% nitrogen by weight.

   Tests for percent sulfur in fuel shall be conducted using testing methods established in 40 CFR 60.335. The test for nitrogen in fuel oil can be any one of the ASTM methods from ASTM D6366-99, D4629-02, or D5762-02. A fuel sample shall be drawn daily from the day or the holding tank that supplies fuel oil to this unit.

4. **Oxides of Nitrogen (NO_x) Emission Limitations:**

   a. BACT is the use of water injection to control NO_x emissions. VIWAPA must use

water injection at all times except when operating at low load (less than 25% capacity) as reserve.

b. NO_x Emission Limits (measured as NO_2)

Operating above low load-

When operating above low load, the concentration of NOx in the exhaust gas shall not exceed by volume (ppmdv), on a dry basis, corrected to 15% oxygen (as determined by continuous emissions monitoring and stack testing) on an hourly average basis as follows:

NOx (ppm) = 42, when fuel oil's nitrogen content is 150 ppm or below; or

NOx (ppm) = 42 + [((N/10,000)-0.015) x 470.59], where N is the fuel oil's nitrogen content in ppm and it is above 150 ppm

The NOx concentration value obtained from this equation then shall be used in the equation in 40 CFR 60, Appendix A, Method 19 to calculate the pounds per hour NOx emission limit for that specific nitrogen content of the fuel oil. VIWAPA shall comply with this pounds per hour emission limit when fuel nitrogen content is lower than 1000 ppmw and is operating above low load. However, in no event, including operating at 1000 ppmw nitrogen in fuel, shall VIWAPA exceed 103 lbs/hr NOx; while operating this unit and Unit 15 in a combined cycle mode (with unfired HRSG), the NOx emissions shall not exceed 218 lbs/hr.

Operating below low load-
When operating below low load, NO_x emissions shall not exceed 103 lbs/hr calculated as NO_2; while operating this unit and Unit 15 in a combined cycle mode (with unfired HRSG), the NOx emissions shall not exceed 218 lbs/hr.

c. The compliance with NOx emissions on an hourly average basis shall be determined as follows: VIWAPA shall analyze the nitrogen content of the fuel oil for each day when the NOx CEM reading exceeded 42 ppm (15% oxygen dry) hourly average for any hour during the day when this turbine was operating. The analyses shall be done in accordance with condition (I)(B)(3)(d). The nitrogen content of the fuel oil in ppm shall be used to calculate the maximum allowable hourly NOx emissions using the equations specified in (I)(B)(4)(b) and shall remain in effect for the whole day for which the sample was taken. If the NOx CEM reading on an hourly average does not exceed 42 ppm during the entire day, a fuel analysis for nitrogen is not required for that day. VIWAPA shall also

obtain averages of the measured nitrogen oxide concentrations (in ppmdv) and lbs/hr rate for every hour.

d. The water-to-fuel ratio for various load conditions will be established during the initial performance testing for NOx and reestablished or verified during any subsequent testing. The water-to-fuel ratio values contained in the initial performance test reports required to be submitted to EPA must become enforceable condition of this permit. VIWAPA shall apply to Virgin Islands Department of Planning and Natural Resources to incorporate the water-to-fuel ratios into VIWAPA's operating permit.

5. **Sulfur Dioxide (SO_2) Emission Limitations:**

While operating in a simple or combined cycle mode, SO_2 emissions shall not exceed 68.7 lbs/hr. While operating in a combined cycle mode with Unit 15, SO_2 emissions shall not exceed 135.5 lbs/hr. The emission rate of SO_2 from each mode of operation shall be determined using EPA RM 20 (40 CFR §60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average SO_2 emission rate of these three test runs. See Section V.A. for details on testing requirements.

6. **Carbon Monoxide (CO) Emission Limitations:**

a. While operating in a simple or combined cycle mode, CO emissions shall not exceed 55 lbs/hr when operating at base-load, or 324 lbs/hr when operating at low-load.. While operating in a combined cycle mode with Unit 15, CO emissions shall not exceed 68 lbs/hr at base-load and 729 lbs/hr at low-load. The CO emission rate shall be tested while operating both in the simple and combined-cycle modes using EPA RM 10 (40 CFR §60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average CO emission rate of these three test runs. See Section V.A. for details on testing requirements.

b. While operating in a simple-cycle or combined-cycle mode, CO emissions shall not exceed the following concentrations at various percent load levels, corrected to 15% oxygen, as determined by continuous emission monitoring. While both Units 15 and 18 operating in a combined cycle mode, the higher concentration limit of the two will apply. Percent load will be determined based on the amount of fuel-oil fired.

PERCENT LOAD	CONCENTRATION OF CO (ppmdv @ 15% O_2)
0-24	1369
25-49	855
50-74	234
75-99	94
100	73

7. **Particulate Matter/PM_{10}/Beryllium Emission Limitations:**

   a. While operating in a simple or combined cycle mode, PM emissions shall not exceed 5.0 lbs/hr. While operating in a combined cycle mode with Unit 15, PM emissions shall not exceed 10 lbs/hr

   b. While operating in a simple or combined cycle mode, PM_{10} emissions shall not exceed 5.0 lbs/hr. While operating in a combined cycle mode with Unit 18, PM_{10} emissions shall not exceed 10 lbs/hr.

   c. While operating in a simple or combined cycle mode, Beryllium emissions shall not exceed 9E-4 lbs/hr. While operating in a combined cycle mode with Unit 18, Beryllium emissions shall not exceed 18E-4 lbs/hr.

   d. The emission rates of PM/PM_{10} and Beryllium shall be determined using EPA RM 5, Method 201/201A (40 CFR §51, Appendix M), and EPA RM 104, respectively. These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average emission rate of these three test runs. See Section V.A. for details on testing requirements.

8. **Volatile Organic Compounds (VOC) Emission Limitations:**

   a. While operating in a simple or combined cycle mode, VOC emissions, measured as carbon, shall not exceed 2.0 lbs/hr when operating at base-load, or 67 lbs/hr when operating at low-load. While operating in a combined cycle mode with Unit 15, VOC emissions shall not exceed 4 lbs/hr at base-load and 146 lbs/hr at low-load. The VOC emission rate shall be tested while operating both in the simple and combined-cycle modes using EPA RM 25A (40 CFR §60, Appendix A).

These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each operating mode and compliance for each operating mode shall be based on the average VOC emission rate of these three test runs. See Section V.A. for details on testing requirements.

b. While operating in a simple or combined cycle mode, VOC emissions shall not exceed the following concentrations at various percent load levels, corrected to 15% oxygen. While both Units 15 and 18 operating in a combined cycle mode, the higher concentration limit of the two will apply. Percent load will be determined based on the amount of fuel-oil fired.

PERCENT LOAD	CONCENTRATION OF VOC (ppmdv @ 15% O_2)
0-24	492
25-49	145
50-74	8.1
75-99	4.3
100	4.2

c. EPA reserves the right to require continuous emission monitoring for VOC in the future.

9. **Opacity Limitations:**

Based on the procedures in 40 CFR Part 60, Appendix A, Method 9, the Permittee shall not discharge into the atmosphere any air contaminants with opacity greater than 17 percent except for 3 minutes in any consecutive 30-minute period during which 40 percent shall not be exceeded.

Monitoring and Corrective Action: The Permittee shall conduct daily visual emissions inspections when the units are operating during daylight hours. Visual inspections shall consist of a visual observation of each stack and determination of visible emissions using 40 CFR Part 60, Appendix A- Method 22. If any visible emissions are observed, the Permittee shall do the following:

Within four hours of observing visible emissions, the Permittee shall conduct an opacity test using a certified opacity reader in accordance with Method 9. If the certified visible emissions reading exceeds the 17 percent opacity limit referenced above, then permittee shall verify that the equipment and/or control device causing the visible emissions or opacity is operating according to

the manufacturer specifications. If the equipment or control device is not operating properly, the Permittee shall take a corrective action immediately to eliminate the opacity exceedance. In the event that the exceedance of the 17% opacity standard is not eliminated following immediate implementation of the corrective action, the Permittee shall continue to take corrective actions until the permittee has successfully corrected the opacity problem.

After an initial corrective action is taken, the Permittee shall perform an opacity check via a certified opacity reader in accordance with Method 9 within 24 hours. Such test shall be conducted each day until the permittee has successfully corrected the opacity problem.

Recordkeeping: The Permittee shall maintain records of the visible emissions readings under Method 22 and any opacity tests/inspections under Method 9. If visible emissions or opacity are observed, then records of those readings and all corrective actions shall be maintained.

Reporting: The Permittee shall report any exceedance of the 17 percent opacity limit in the quarterly report. If no exceedance of this permit term occurs, a statement as such shall be included in the quarterly report.

C. Heat Recovery Steam Generator

Heat Recovery Steam Generator shall be unfired and may be used with either Unit 15 or Unit 18 or both.

II. MONITORING and RECORD KEEPING:

A. Unit #15, Unit #18 shall be equipped with operable continuous emission monitors to measure the pollutants or operating parameters as indicated below:

Unit #15:	CO, O_2 and NO_x,
Unit #18:	CO, O_2 and NO_x,

(NOx and CO shall also need to be measured when the flow is diverted to the HRSG)

B. VIWAPA shall install, calibrate and test each continuous emission monitor (CEM) and recorder listed in II.A. Monitors must comply with EPA performance and siting specifications pursuant to 40 CFR §60, Appendix B, Performance Specifications 1-4. Equipment specifications, calibration and operating procedures, and data evaluation and reporting procedures shall be submitted to EPA in a Performance Specification Test protocol. EPA reserves the right to require the auditing of the CEMs by independent agents. All CEMs and recorders required above shall be operational prior to initial start-

up. Data collected from the CEMs will be quality controlled and quality assured in accordance with the procedures specified in 40 CFR §60, Appendix F.

C. Log books shall be kept and updated daily to record the following:

a. exceedance of emission limitations determined by continuous monitoring;
b. the sulfur content of all fuel-oil burned;
c. the sulfur content, ash content, and lead content of all waste-oil burned, and the list of generators for each shipment received (to be provided by the waste-oil generator or transporter). VIWAPA may petition EPA to modify this requirement after a minimum of 12 months from commencement of waste-oil burning;
d. the amount of water consumed to control NO_x emissions from Unit #15 and Unit #18, respectively;
e. the amount of steam produced (pounds per hour) from Unit #15, Unit #18 and the HRSG, and the electrical output (MW) on an hourly basis from Unit #15 and Unit #18;
f. The amount of time that Unit #15 and Unit #18 are operated at low-load conditions, recorded on a rolling 12-month basis; and
g. The hourly blending ratio of fuel-oil to waste-oil in Unit #11 and Unit #13. VIWAPA shall submit such information to EPA quarterly from commencement of waste-oil burning.
h. hourly average of NOx CEM measurements for each 24-hour period and nitrogen content of the fuel for each day it was measured

D. All continuous monitoring records and log books specified in this section must be maintained for a period of five years after the date of record, and made available upon request.

E. In each report quarter, 90% quality data availability shall be maintained for all gaseous monitors. There shall be a quality assurance plan coupled with a calibration and maintenance program.

III. REPORTING REQUIREMENTS:

A. All emission reports, testing reports and start-up notifications required under this permit shall be submitted to the EPA official named below. Three copies of the stack test report must be submitted within 60 days after completion of the test.

The Chief, Multimedia Permit and Compliance Branch
Caribbean Environmental Protection Division
City View Plaza II - Suite 7000
48 Carr. 165 km1.2, Guaynabo, PR 00968-8073

B. Upsets/Malfunctions:

Upsets/malfunctions and actions taken on any unit must be reported by telephone within 24 hours with a follow-up letter within 5 calendar days to:

Director, Division of Environmental Protection
Virgin Islands Department of Planning and Natural Resources
Cyril E. King Airport, 2nd Floor
St. Thomas, U.S. VI 00802

C. VIWAPA shall submit a written report of excess emissions to EPA for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information specified below:

1. Specific identification of each period of excess emissions that occurred during start-ups, shutdowns, and malfunctions of the affected facility.

2. The nature and cause of any malfunction (if known) of the affected facility and the corrective action taken or preventative measures adopted.

3. For apparent excess emissions due to CEM malfunction, provide the date and time identifying each period during which the continuous monitoring system was inoperative (not including zero and span checks) and the nature of the system repairs or adjustments.

4. When no excess emissions have occurred, or the continuous monitoring system(s) have not been inoperative, repaired or adjusted, such information shall be stated in the report.

The quarterly excess emission reports required in this section shall be sent to the following EPA personnel with a copy going to the EPA and the VIDPNR offices listed above:

Region 2 CEM Coordinator
Air and Water Section
Monitoring and Management Branch
U.S. EPA Region 2
2890 Woodbridge Avenue
Edison, New Jersey 08837

IV. OTHER PERMIT CONDITIONS:

A. This facility is subject to the General Provisions of the New Source Performance Standards (NSPS), codified at 40 CFR §60, Subpart A and the NSPS for Stationary Gas Turbines (40 CFR §60, Subpart GG).

B. VIWAPA shall meet all other applicable federal, state and local requirements, including those contained in the Virgin Islands State Implementation Plan (VI SIP).

V. TESTING REQUIREMENTS:

A. VIWAPA shall perform the following:

1. Conduct stack tests in accordance with the test methods published in 40 CFR §60, Appendix A. All tests on a given unit must be conducted within 60 days after achieving shakedown, but no later than 180 days after initial start-up.

2. Obtain approval of a stack test protocol. A detailed description of the sampling point locations, sampling equipment, sampling and analytical procedures, data reporting forms, quality assurance procedures and operating conditions for such tests must be submitted to the EPA.

3. Notify EPA and VIDPNR at least 30 days prior to actual testing.

4. Provide permanent sampling and testing facilities as may be required by the EPA to determine the nature and quantity of emissions from each unit. Such facilities shall conform with all applicable laws and regulations concerning safe construction and safe practice.

B. EPA reserves the right to require additional stack testing of the pollutants for which an emission limitation has been set in Section I of the permit.

ENCLOSURE II

Virgin Islands Water and Power Authority, St. Thomas
Combustion Turbine Unit 22
Final Modified Permit-July, 2016

I. Unit 22 (24 MW United Technologies FT-8-1 Power PAC unit)

A. Fuel Oil Usage Limit

1. The total fuel usage for Unit 22 shall not exceed 15,452,640 gallons during any consecutive 365-day period. Daily compliance shall be determined by adding the amount of fuel oil used during each calendar day to the total quantity of fuel oil used in the preceding 364 calendar days.

2. The maximum heat input shall not exceed 247 million British thermal units per hour (MMBTU/hr).

3. The maximum fuel consumption rate shall not exceed 1,764 gallons per hour (gal/hr).

4. The type of fuel is limited to No. 2 fuel oil or distillate fuel oil with a sulfur content of no more than 0.2% sulfur by weight and a nitrogen content of no more than 0.10% nitrogen by weight.

5. Tests for percent sulfur in fuel shall be conducted using testing methods established in 40 CFR 60.335. The test for nitrogen in fuel oil can be any one of the ASTM methods from ASTM D6366-99, D4629-02, or D5762-02. The fuel sample shall be drawn daily from the day or the holding tank that supplies fuel oil to this unit.

6. The maximum capacity of Unit 22 shall be defined as the maximum energy output in megawatts (MW) as determined and fixed during the initial performance tests when the maximum amount of fuel is combusted.

7. Percent load shall be determined by the ratio of the actual load in MW to the maximum capacity in MW. The maximum capacity of Unit 22 shall be determined in accordance with Condition (I)(A)(6) above.

B. Sulfur Dioxide (SO_2) Emission Limit

1. BACT is the use of No. 2 fuel oil with a sulfur content of no more than 0.2% sulfur by weight.

1. The sulfur dioxide emissions shall not exceed 52.1 pounds per hour (lbs/hr) at all times.

2. Initial compliance with the above emission limit shall be demonstrated by stack tests using EPA Reference Method 20 (40 CFR 60 Appendix A). The initial stack test shall be conducted at various loads. These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted at various load conditions and compliance shall be based on the average SO_2 emission rate of these test runs. VIWAPA shall demonstrate subsequent compliance with the SO_2 emission rate by calculating emissions based on average weekly fuel sulfur content and flow rate. In these calculations, VIWAPA shall assume that all sulfur is converted to SO_2.

B. Nitrogen Oxides (NO_x) Emissions

1. BACT is the use of water injection to control NO_x emissions. VIWAPA must use water injection at all times except when operating at low load (less than 25% capacity) as reserve.

2. NO_x Emission Limits (measured as NO_2)

Operating above low load-
When operating above low load, the concentration of NOx in the exhaust gas shall not exceed by volume (ppmdv), on a dry basis, corrected to 15% oxygen (as determined by continuous emissions monitoring and stack testing) on an hourly average basis as follows:

NOx (ppm) = 42, when fuel oil's nitrogen content is 150 ppm or below; or

NOx (ppm) = 42 + [((N/10,000)-0.015) x 470.59], where N is the fuel oil's nitrogen content in ppm and it is above 150 ppm

The NOx concentration value obtained from this equation then shall be used in the equation in 40 CFR 60, Appendix A, Method 19 to calculate the pounds per hour NOx emission limit for that specific nitrogen content of the fuel oil. VIWAPA shall comply with this pounds per hour emission limit when fuel nitrogen content is lower than 1000 ppmw and is operating the unit above low load. However, in no event, including operating at 1000 ppmw nitrogen fuel, shall VIWAPA exceed 77 lbs/hour NOx.

Operating below low load-
When operating below low load, NOx emissions shall not exceed 77 lbs/hr.

3. The NOx emission rate shall be tested using EPA Reference Method 20 (see 40 CFR Part 60 Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted at each of four different load conditions (including the minimum point in the range and peak load) and compliance shall be based on the average NO_x emission rate of these test runs. These tests for NOx shall be conducted within 180 days of the effective date of this permit or within 180 days of this unit becoming operational, whichever is later.

4. The compliance with NOx emissions on an hourly average basis shall be determined as follows: VIWAPA shall analyze the nitrogen content of the fuel oil for each day when the NOx CEM reading exceeded 42 ppm (15% oxygen dry) hourly average for any hour during the day when this turbine was operating. The analyses shall be done in accordance with condition (I)(A)(5). The nitrogen content of the fuel oil in ppm shall be used to calculate the maximum allowable hourly NOx emissions using the equations specified in (I)(C)(2) and shall remain in effect for the whole day for which the sample was taken. If the NOx CEM reading on an hourly average does not exceed 42 ppm during the entire day, a fuel analysis for nitrogen is not required for that day. VIWAPA shall also obtain averages of the measured nitrogen oxide concentrations (in ppmdv) and lbs/hr rate for every hour..

5. The water-to-fuel ratio for various load conditions will be established during the initial performance testing for NOx and reestablished or verified during any subsequent testing. The water-to-fuel ratio values contained in the initial performance test reports required to be submitted to EPA must become enforceable condition of this permit. VIWAPA shall apply to Virgin Islands Department of Planning and Natural Resources to incorporate the water-to-fuel ratios into VIWAPA's operating permit.

D. <u>Carbon Monoxide (CO) Emissions</u>

1. BACT for CO is the use and maintenance of good combustion practices at all times.

2. Emission Limits

CO emissions shall not exceed the most stringent of the following at any time:

a) CO emissions shall not exceed 34 lbs/hr; or

b) CO emissions at various percent load levels shall not exceed the following concentrations corrected to 15% oxygen as determined by continuous emission monitoring (see Condition (I)(A)(7) for the definition of percent load):

Percent Load	CO Concentration (ppmdv @ 15% O_2)
0 - 24	350
75 - 99	16
100	10

3. For any 8-hour period, Unit 22 shall not operate below a load factor of 15 percent. Unit 22 shall not be operated at synchronous idle for more than a total of 6 hours per day.

4. The CO mass emission rates at various loads will be tested using EPA Reference Method 10 (40 CFR Part 60, Appendix A). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each of the three load conditions (percent loads) indicated in the above table and compliance for each operating mode shall be based on the average CO emission rate of these three test runs.

E. Particulate Matter/PM_{10} Emissions

1. BACT for PM/PM_{10} is the use and maintenance of good combustion practices at all times.

2. Emission Limits

   a) The PM emissions shall not exceed 9 lbs/hr.

   b) The PM_{10} emissions shall not exceed 22.6 lbs/hr.

3. The PM emission rate shall be determined using EPA Reference Method 5. The PM_{10} emission rate shall be determined using EPA Reference Method 201/201A and 202 (40 CFR Part 51, Appendix M). These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each of the three load conditions (0 - 24, 75 – 99, and 100 percent load) and compliance shall be based on the average emission rate of these three test runs.

F. Opacity

Based on the procedures in 40 CFR Part 60, Appendix A, Method 9, the Permittee shall not discharge into the atmosphere any air contaminants with opacity greater than 17 percent except for 3 minutes in any consecutive 30-minute period during which 40 percent shall not be exceeded.

Monitoring and Corrective Action: The Permittee shall conduct daily visual emissions inspections when the units are operating during daylight hours. Visual inspections shall consist of a visual observation of each stack and determination of visible emissions using 40 CFR Part 60, Appendix A, Method 22. If any visible emissions are observed, the Permittee shall do the following:

Within four hours of observing visible emissions, the Permittee shall conduct an opacity test using a certified opacity reader in accordance with Method 9. If the certified visible emissions reading exceeds the 17 percent opacity limit referenced above, then permittee shall verify that the equipment and/or control device causing the visible emissions or opacity is operating according to the manufacturer specifications. If the equipment or control device is not operating properly, the Permittee shall take a corrective action immediately to eliminate the opacity exceedance. In the event that the exceedance of the 17% opacity standard is not eliminated following immediate implementation of the corrective action, the Permittee shall continue to take corrective actions until the permittee has successfully corrected the opacity problem.

After an initial corrective action is taken, the Permittee shall perform an opacity check via a certified opacity reader in accordance with Method 9 within 24 hours. Such test shall be conducted each day until the permittee has successfully corrected the opacity problem.

Recordkeeping: The Permittee shall maintain records of the visible emissions readings under Method 22 and any opacity tests/inspections under Method 9. If visible emissions or opacity are observed, then records of those readings and all corrective actions shall be maintained.

Reporting: The Permittee shall report any exceedance of the 17 percent opacity limit in the quarterly report. If no exceedance of this permit term occurs, a statement as such shall be included in the quarterly report.

G. VOC Emissions

1. BACT for VOC is the use and maintenance of good combustion practices at all times.

2. Emission Limits

   VOC emissions shall not exceed the most stringent of the following at any time:

   a) VOC emissions shall not exceed 10.3 lbs/hr measured as carbon; or

   b) VOC emissions shall not exceed the following concentrations at the various percent load levels corrected to 15% oxygen (see Condition (I)(A)(7) for the definition of percent load):

Percent Load	Concentration of VOC (ppmdv @ 15% O_2)
0 - 24	95
75 - 99	12
100	8

3. The emission rates of VOC will be tested using EPA Reference Method 25A (40 CFR Part 60, Appendix A). VIWAPA may subtract methane and ethane emissions using EPA Reference Method 18 from the Method 25A VOC emission determination. These tests shall be conducted according to a written protocol approved by EPA prior to any testing. Three test runs shall be conducted for each of the three load conditions (percent loads) indicated in the above table and compliance shall be based on the average VOC emission rate of these three test runs.

4. EPA reserves the right to require CEM for VOC in the future.

II Existing Units

A. Units 9 and 10

Units 9 and 10 shall be dismantled and permanently removed from the Krum Bay facility prior to the initial start-up of Unit 22.

B. Units 11 and 13

1. The following changes are made to Attachment II of the August 24, 1994 PSD permit:

   a) VIWAPA shall use a multiclone to control the emissions of PM_{10} from Unit 13. The efficiency of the multiclone shall be maintained at no less than 80% by maintaining a pressure drop of one (1) inch of water across the multiclone at all times.

   b) The total fuel usage for Unit #11 and Unit #13 (fuel-oil and "waste-oil") shall not exceed 43,000,000 gallons during any period of 365 consecutive days. Daily compliance shall be determined by adding the amount of fuel-oil used during each calendar day to the total quantity of the fuel-oil used in the preceding 364 calendar days. VIWAPA shall use only No. 6 fuel oil in which the sulfur content does not exceed 0.56 percent by weight. Fuel usage records containing the sulfur content and the number of gallons burned on an hourly basis at the two units shall be maintained for a period of at least five years. Unit #11 and Unit #13 are limited to a maximum fuel consumption rate of 14,378 lbs/hr and 26,000 lbs/hr,

respectively.

c) VIWAPA shall use not more than 200,000 gallons of waste-oil ("used" oil, including "off-spec" oil) during any period of 365 consecutive days. Daily compliance for waste-oil use shall be determined by adding the amount of waste-oil used during each day to the total quantity of the waste-oil used in the preceding 364 calendar days.

d) VIWAPA shall implement a program to "blend" the fuel oil and the waste oil, so as to ensure that the fuel stream being fed into Unit 11 and/or Unit 13 has a sulfur content less than or equal to 1.5% by weight. VIWAPA shall monitor the sulfur content of the "blended" fuel oil/waste oil mixture to ensure that the sulfur content is not more than 1.5% by weight. VIWAPA shall not accept any shipment of waste oil that exceeds the following concentrations:

Constituent		Maximum Concentration (%)
Ash	Maximum	5.0
	Annual Average	2.5
Sulfur	Maximum	8.0
	Annual Average	2.0
Lead (Annual Average)		0.05
Chlorine (Maximum)		0.4

The maximum ash content of waste oil shall not be more than 5% and the maximum sulfur content shall not be more than 8%.

All other conditions that apply to Units 11 and 13 as specified in the August 24, 1994 PSD permit remain unchanged and in full force.

A. Unit 14

Unit 14 shall not be operated unless one of the following units is out of service: Unit 11, Unit 13, Unit 15, Unit 18, or Unit 22.

III Testing Requirements

VIWAPA shall conduct all performance tests for Unit 22 in accordance with the following:

Within 60 days after achieving shakedown, but no later than 180 days after initial startup as defined in 40 CFR Part 60.2, VIWAPA shall conduct performance stack tests on Unit 22 for

SO_2, NO_x, PM, PM_{10}, CO, VOCs, and opacity in accordance with the test methods published in 40 CFR Part 60, Appendix A and 40 CFR Part 51, Appendix M.

A. At least 60 days prior to the actual performance stack test, VIWAPA shall submit to the EPA for approval a Quality Assurance Project Plan (stack test protocol). The Quality Assurance Project Plan shall contain a detailed description of the sampling point location, sampling equipment, sampling and analytical procedures, data reporting forms, quality assurance procedures and operating conditions for such tests must be submitted to the EPA. A Quality Assurance Project Plan that does not have EPA approval may be grounds to invalidate any test and require a re-test.

B. Notification of the stack test must be given to EPA and VIDPNR at least 30 days prior to actual testing.

C. Provide permanent sampling and testing facilities as may be required by the EPA to determine the nature and quantity of emissions from Unit 22. Such facilities shall conform with all applicable laws and regulations concerning safe construction and safe practice.

D. Test results indicating that emissions are below the limits of detection shall be deemed to be in compliance.

E. Additional performance tests may be required at the discretion of the EPA for any or all of the above pollutants.

F. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purposes of a performance test.

G. Start-up for Unit 22 is defined as the period beginning with light-off of the combustion turbine as initiated by the start cycle, followed by acceleration to 3600 revolutions per minute (RPM), closing of the breaker, and automatic loading to the pre-selected level at the pre-selected loading rate. The start-up process shall not exceed 20 minutes in duration.

H. Shutdown for Unit 22 is defined as the period of time beginning with unloading of the combustion turbine to zero power as initiated by the shutdown cycle, followed by the breaker opening, and deceleration to "gas generator idle" for a five minute cool down before fuel flow is shut off. The shutdown process shall not exceed 20 minutes in duration.

IV Monitoring Requirements

A. <u>Unit 22</u>

1. Within 180 days of the initial startup of Unit 22 and thereafter, VIWAPA shall install, calibrate, maintain and operate continuous emission monitors or monitoring systems to

measure stack emissions and operating parameters indicated below:

Continuous Emission Monitors (CEMs): CO, O_2, and NO_x,
Continuous Monitors: Volumetric stack gas flow rate, stack temperature, water-to-fuel ratio, and fuel flow rate.

2. Not less than 90 days prior to the date of startup of Unit 22, VIWAPA must submit to the EPA a Quality Assurance Project Plan for the certification of the CEM systems. CEM performance testing may not begin until the Quality Assurance project Plan has been approved by EPA.

3. Within 180 days of the initial startup of Unit 22, VIWAPA shall install, calibrate and test each continuous emission monitor (CEM) and recorder listed above. Monitors must comply with EPA performance and siting specifications pursuant to 40 CFR Part 60, Appendix B, Performance Specifications 1-4. Equipment specifications calibration and operating procedures, and data evaluation and reporting procedures shall be submitted to EPA in a performance Specification Test protocol. EPA reserves the right to require the auditing of the CEMs by independent agents. Data collected from the CEMs will be quality controlled and quality assured in accordance with the procedures specified in 40 CFR Part 60 Appendix F and Method 203.

4. VIWAPA shall submit a written report to EPA of the results of all monitor performance specification tests conducted on the monitoring system(s) within 45 days of the completion of the tests. The continuous emission monitors must meet all the requirements of the applicable performance specification test in order for the monitors to be certified.

5. Logs shall be kept and updated in the specified timeframe to record the following:

   a) the amount of water in gallons per hour used to control NO_x emissions and the water-to- fuel ratio on an hourly basis;

   b) the No. 2 fuel oil burned in gallons on an hourly and annual (rolling 365-day) basis;

   c) hours of operation for Unit 22 on a daily basis;

   d) exceedance of emission limits determined by continuous monitoring;

   e) the sulfur and nitrogen content of all fuel oil burned and the SO_2 emission calculations; and

   f) the amount of electrical output in MW on an hourly basis.

g) hourly average of NOx CEM measurements for each 24-hour period and nitrogen content of the fuel for each day it was measured

B. Existing Units 11 and 13

Log shall be kept and updated in the specified time frame to record the following:

1. the sulfur content of each shipment of No. 6 fuel oil received;

2. the amount of No. 6 fuel oil burned in gallons on an hourly and annual (rolling 365-day) basis,

3. the content of sulfur, ash, lead, and chlorine of all waste-oil burned and the list of generators for each waste-oil shipment received (to be provided by the waste-oil generator or transporter);

4. the amount of waste oil burned in gallons on an hourly and annual (rolling 365-day) basis;

5. the hourly blending ratio of fuel-oil to waste-oil in Unit 11 and 13 when waste-oil is burned;

6. the sulfur content of each blended mixture of No. 6 fuel oil and waste oil to be burned in Units 11 and 13;

7. the amount of electrical output in MW on an hourly basis; and

8. the pressure drop across the multiclone once per day.

C. Unit 14

Whenever Unit 14 is operated, a log shall be kept to record the following information:

1. which existing unit is being shut down and replaced by Unit 14;

2. the sulfur content of No. 2 fuel oil burned;

3. the amount of No. 2 fuel oil burned on an hourly and annual (rolling 365-day) basis;

4. the hours of operation on a daily basis; and

5. the electrical output in MW on an hourly basis.

D. All continuous monitoring records and logs specified in this section must be maintained for at least five years from the date of measurement and made available upon request.

I. Reporting Requirements

A.Results of emission testing must be submitted to EPA within 60 days after completion of the performance tests.

B.VIWAPA shall submit a written report of all excess emissions to EPA for every calendar quarter. All quarterly excess emission reports shall be postmarked by the 30th day following the end of each quarter. The information specified below shall be included in the reports:

1. Specific identification of each period of excess emissions that occurred during start-ups, shutdowns, and malfunctions of the affected facility.

2. The nature and cause of any malfunction (if known) of the affected facility and the corrective action taken or preventative measures adopted.

3. For apparent excess emissions due to CEM malfunction, provide the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repair or adjustments.

When no excess emissions have occurred or the CEM system has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

C.Emissions in excess of the applicable concentration limits (in ppmdv corrected to 15% oxygen) listed under Conditions (I)(C), (I)(D) and (I)(G) of this permit for Unit 22 during start-ups and shutdowns shall not be considered violation of the applicable concentration limits. See Condition (III)(H) and (III)(I) for the definition of start-up and shutdown for Unit 22.

D.Upsets/Malfunctions:

Malfunction means any sudden, infrequent, and not reasonably preventable failure of an air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

All upsets/malfunctions of any of the units (including but not limited to Units 11, 12, 13, 14, 15, 18, 22 and the HRSG) must be reported by telephone within 24 hours to the VIDPNR office listed above. A follow-up letter describing the incident, the amount of down time and the corresponding action taken must be submitted within 5 calendar days to Director, Division of Environmental Protection of the VIDPNR at the address listed above. A copy shall be submitted to Director, Caribbean Environmental Protection Division of the U.S. Environmental Protection Agency,

Region 2 Office at the address listed below.

E. Report any deviations that occur during any one hour average when the water to fuel ratio falls below the level needed to maintain compliance as established in Condition (I)(C)(4). These deviations should be made part of the excess emission reports.

The quarterly excess emission reports required in this section shall be sent to the following EPA and VIDPNR personnel:

Region 2 CEM Coordinator
AWQAT MS-220
Monitoring and Management Branch
U.S. EPA Region 2
2890 Woodbridge Avenue
Edison, New Jersey 08837

The Chief, Multimedia Permit and Compliance Branch
Caribbean Environmental Protection Division
City View Plaza II - Suite 7000
48 Carr. 165 km1.2
Guaynabo, PR 00968-8073

Director, Division of Environmental Protection
Virgin Islands Department of Planning and Natural Resources
Cyril E. King Airport, 2nd Floor
St. Thomas, U.S. VI 00802

F. All emission reports, testing reports and start-up notifications required under this permit shall be submitted to Director, Caribbean Environmental Protection Division, U.S.EPA, Region II at the address listed above. Three copies of the stack test report must be submitted within 60 days after completion of the test.

G. In each report quarter, 95% quality data availability shall be maintained for all gaseous monitors. There shall be a quality assurance plan coupled with a calibration and maintenance program.

VI Other Permit conditions

A. This facility is subject to the General Provisions of the NSPS (40 CFR Part 60, Subpart A), and the NSPS for Stationary Gas Turbines (40 CFR Part 60, Subpart GG).

B. VIWAPA shall meet all other applicable federal, state, and local requirements, including those contained in the Virgin Islands State Implementation Plan (VISIP).