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

SEP 0 8 2004

Mr. Alberto Bruno-Vega
Executive Director
Virgin Islands Water and Power Authority (VIWAPA)
P.O. Box 1450
St. Thomas, U.S. Virgin Islands 00804

Sub: Final Permit- Prevention of Significant Deterioration of Air Quality (PSD)
Unit 23- Krum Bay, St. Thomas

Dear Mr. Bruno-Vega:

On June 9, 2003, the U.S. Environmental Protection Agency (EPA), Region 2, received a PSD permit application from VIWAPA, for the construction of a simple cycle combustion turbine at the Krum Bay location. This General Electric Frame 6 turbine will be rated at 39 megawatts (MW) and will burn no. 2 distillate fuel oil with a maximum of 0.15% sulfur. Based on the review of the information VIWAPA provided through September 15, 2003, EPA issued a draft PSD permit on January 9, 2004. The public comment period ended on February 17, 2004. VIWAPA and the National Park Service submitted about 15 comments.

EPA reviewed all the comments and made changes to the draft permit as appropriate. This final permit also includes EPA initiated changes to fuel sampling provisions to reflect EPA's revised 40 CFR Part 60, Subpart GG under the New Source Performance Standards. The changes and the response to all the comments that were raised during the public comment period can be found in Enclosure III. A project description and summary of the control technologies to be used are provided in Enclosure I. The permit conditions are found in Enclosure II.

EPA concludes that this final permit meets all applicable requirements of the PSD regulations codified at 40 CFR §52.21 and the Clean Air Act (the Act). Accordingly, I hereby approve VIWAPA's PSD permit. This letter and its enclosures represent EPA's final permit decision. The Administrative Record for this case is located at the EPA Region 2 Office in New York City, New York. This final permit decision may be challenged under the Consolidated Permit Regulations, codified at 40 CFR Part 124, that apply to EPA's processing of this permit decision. Specifically, 40 CFR §124.19 establishes the following procedures for administrative appeal of the final PSD permit decision. Any person who filed a comment on the draft permit may petition the Environmental Appeals Board in Washington, D.C. for review. In addition, any person who failed to file a comment on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit. Any petition for review under this part must be made within thirty (30) days of the service of notice of the final permit decision.

The petition for review shall include a statement of the reasons supporting that review, and shall adhere to the standards outlined in 40 CFR §124.19(a).

All persons applying for administrative review must file the original and one (1) copy of the petition for review with the Environmental Appeals Board at the following address:

For Regular Mail:
U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

All filings delivered by hand or courier, including Federal Express, UPS, and U.S. Postal Express Mail, MUST now be delivered to the Board's new address:
Colorado Building
1341 G Street, NW, Suite 600
Washington, D.C. 20005

Phone number: (202) 233-0122

For purposes of judicial review under the Act, final Agency action does not occur until after administrative review procedures are exhausted. Notice of the Agency's final action with respect to this permit will be published in the Federal Register. Judicial review of this final action is available by filing a petition for review in the United States Court of Appeals for the appropriate circuit within sixty (60) days of the date of the Federal Register notice. Under Section 307(b) of the Act, a final Agency action shall not be subject to judicial review in civil or criminal proceedings for enforcement.

Since comments requesting changes to the draft permit were received and changes were made to the draft permit, this final permit will become effective thirty (30) days after the service of notice, unless review is requested under 40 CFR §124.19. If a petition for review of the final Agency action is filed, the permit will not become effective until after a decision on the petition is rendered by the Environmental Appeals Board.

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,

Walter Mugdan, Director
Division of Environmental Planning and Protection

Enclosure I- Final Permit

Virgin Islands Water and Power Authority (VIWAPA)
GE Frame 6- Combustion Turbine (Unit 23) Project, St. Thomas

Project Description

General Project Description:
On June 9, 2003, VIWAPA proposed to install and operate a new 39 megawatt (MW) GE Frame 6 simple cycle gas turbine unit, also known as Unit 23, at its Krum Bay site in St. Thomas, Virgin Islands. This Unit 23 will produce electricity from a General Electric Frame 6 combustion gas turbine. The gas turbine will use number 2 distillate oil (0.15% sulfur) as the only fuel. The combustion turbine generator will consist of a compressor, combustor, turbine, and generator. Energy is generated at the combustion turbine by drawing in ambient air with the compressor, heating the air by means of burning fuel and expanding the hot combustion gases in a 4-stage turbine. The VIWAPA St. Thomas facility currently includes two existing steam electric generating boilers (Units 11 and 13), five combustion turbines (Units 12, 14, 15, 18, and 22) and one heat recovery steam generator (HRSG) that is operated in a combined cycle mode with Units 15 and 18 and the existing steam generators. The boilers use no. 6 fuel oil whereas all the turbines and the HRSG use no. 2 distillate fuel oil. The current rated capacity at this site is 154 MW. The emission control and air quality impacts analyses are provided below.

PSD-Affected Pollutants Emitted for Unit 23: The facility is classified as a major stationary source because it has the potential to emit more than 100 tons per year of at least one pollutant regulated by the Clean Air Act. The proposed facility is subject to the Prevention of Significant Deterioration of Air Quality (PSD) standards for oxides of nitrogen (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), particulate matter less than 10 microns (PM_{10}), and volatile organic compounds (VOC). Table I summarizes this new unit's PSD analyses.

VIWAPA Unit 23 Emissions and Control Equipment: The proposed Unit will employ Best Available Control Technology to control the pollutants described above. Table I-A provides the summary of proposed emissions and controls for this Unit.

<u>Combustion Turbine Unit 23:</u>
Emissions of nitrogen oxides will be controlled by the use of a steam or water injection process into the combustion system. The steam/water to fuel ratio for each unit shall be established during performance testing and shall be incorporated into the Title V Permit.

Emissions of sulfur dioxide shall be controlled by the use of low sulfur No.2 fuel oil in which the sulfur content will not exceed 0.15 % by weight.

Emissions of carbon monoxide, particulate matter less than 10 microns, and volatile organic compounds will be controlled by implementing good combustion practices. VIWAPA shall be required to operate each turbine within the designed combustion parameters of the General Electric Frame 6 combustion turbine. In addition, VIWAPA shall be required to monitor the combustion temperature and fuel flow rate of each turbine, and VIWAPA shall be required to maintain each turbine in good working order.

VIWAPA Unit 23- St. Thomas

Table I. PSD Analyses for Unit 23

POLLUTANT	PSD SIGNIFICANT EMISSION RATE TONS/YEAR	VIWAPA Unit 23 EMISSIONS TONS/YEAR	PSD APPLICABLE
Nitrogen Oxides (NO_x)	40	592	Yes
Sulfur Dioxide (SO_2)	40	313	Yes
Sulfuric Acid Mist (H_2SO_4)	7	33	Yes
Particulate Matter - Total (PM)	25	131	Yes
Particulate Matter less than 10 microns (PM_{10})	15	131	Yes
Carbon Monoxide (CO)	100	355	Yes
Volatile Organic Compounds (VOC)	40	66	Yes
Lead	0.6	0.027	No

Table I-A. Emissions and Controls

POLLUTANT	EMISSION LIMITS FOR NEW TURBINE	EMISSION CONTROL FOR NEW TURBINE
SO_2	71.4 lbs/hr	LOW SULFUR No. 2 FUEL (0.15%)
NO_X	42-84 PPMDV (78-135 lbs/hr)	WATER/STEAM INJECTION
Sulfuric Acid	7.5 lbs/hr	LOW SULFUR No. 2 FUEL (0.15%)
PM/PM-10	30 lbs/hr (PM) 30 lbs/hr (PM-10)	COMBUSTION CONTROL
CO	174 PPMDV @ MIN LOAD 81 lbs/hr	COMBUSTION CONTROL
VOC	53 PPMDV @ MIN LOAD	COMBUSTION CONTROL

*All ppmdv emission limits are corrected to 15% oxygen

VIWAPA St. Thomas Unit 23- Air Quality Analyses

The following Tables summarize the air quality impact analyses performed for the permit of Unit 23. Table II illustrates the impacts due solely from Unit 23 emissions. It shows that the impacts from Unit 23 are greater than the significant impact levels which means that a cumulative source analysis of the PSD Increment and NAAQS is required (in this case for PM10, SO2, and NOx). It also shows that impacts from Unit 23 are below the PSD ambient air monitoring de minimis levels which allows EPA to exempt the facility from conducting a one year, pre-permit application monitoring analysis. Table III illustrates compliance with the PSD Increment and NAAQS in St. Thomas due to the combined impacts from Unit 23, the other Units at the VIWAPA St. Thomas facility and other surrounding facilities. Table IV illustrates compliance with the Class I Area PSD Increment and NAAQS in St. John due to the combined impacts from Unit 23, the other Units at the VIWAPA St. Thomas facility and other surrounding facilities. Class I areas have stricter Increment standards due to their pristine nature.

Below are some key points to note regarding the air quality analyses in Table II - IV:
- SO_2 impacts are based on 0.2 % sulfur in fuel although this number was reduced to 0.15% in this permit.
- Impacts from Unit 22 and Unit 23 are based on the operating load which lead to worst case impacts. This was determined to be under idle loads for all pollutants except SO_2 which had worst case impacts at 100% load. All other Units in the cumulative analysis were modeled at 100% load.
- NOx impacts from VIWAPA Units 15, 18, 22 and 23 are based on a Nitrogen in fuel concentration of 1000ppm by weight.
- EPA determined that VIWAPA may be exempt from installing preconstruction ambient air monitors since the impacts from the proposed Unit 23 are below the PSD Preconstruction Monitoring de minimis levels.
- The model used to determine the impacts is the EPA proposed model, AERMOD.

Table II. Air Quality Impacts due to Unit 23 Only (Concentrations in ug/m3)

Pollutant Averaging Period	Modeled Impact Unit 23	Significant Impact Level	Increment & NAAQS Required?	Monitoring Exemption Level	Existing Monitored Concentration	VIWAPA Exempt from Installing Monitor?
PM_{10} 24 hour Annual	 9 1	 5 1	 YES YES	 10 ---	 97 28	YES
SO_2 3 hour 24 hour Annual	 27 11 3	 25 5 1	 YES YES YES	 --- 13 ---	 Not Available Not Available 5	YES
NO_2 Annual	 5	 1	 YES	 14	 8	YES
CO 1 hour 8 hour	 118 52	 2000 500	 NO NO	 --- 575	 15,463 6,367	YES

Table III . Cumulative Source PSD Increment and NAAQS in St. Thomas

Pollutant Averaging Period	Modeled Class II Increment	Class II Increment	Modeled + Background NAAQS*	NAAQS
PM_{10} 24 hour Annual	 22 5	 30 17	 120 36	 150 50
$S0_2$ 3 hour 24 hour Annual	 91 18 10	 512 91 20	 554 145 40	 1300 365 80
NO2 Annual	15	25	65	100
CO 1 hour 8 hour	 NonApplicable NonApplicable	 NonApplicable NonApplicable	 16,124 6,698	 40,000 10,000

* Except for S02, this column represents the sum of the total modeled impacts from all facilities on St. Thomas (VIWAPA and other nearby facilities) plus a measured value obtained from a representative monitor to account for emissions from any unmodeled source (e.g., mobile sources). Since there is no representative SO2 monitor in the area, VIWAPA requested a waiver from the preconstruction ambient air monitoring requirements for this pollutant. Since the modeled impacts from the new unit 23 are below the PSD preconstruction monitoring de minimis levels, and all major sources of S02 are accounted for in the modeling analysis and shown to be well below the NAAQS, EPA granted the waiver request.

Table IV. Cumulative Source PSD Increment and NAAQS in St. John National Park - Class I Area

Pollutant Averaging Period	Modeled Impact Unit 23	Significant Impact Level	Increment & NAAQS Required?	Modeled Class 1 Increment	Allowable Class 1 Increment	Modeled NAAQS	Allowab. NAAQS
PM_{10} 24 hour Annual	 0.13 0.0007	 0.3 0.15	 NO	 1.3 0.4	 8 4	 NonAppl .	 150 50
SO_2 3 hour 24 hour Annual	 1.7 0.34 0.002	 1 0.2 0.08	 YES	 4.4 0.8 0.3	 25 5 2	 9.11 1.55 0.35	 1300 365 80
NO_2 Annual	0.0018	0.1	NO	.01	2.5	1.9	100

ENCLOSURE II (Final Permit)

Virgin Islands Water and Power Authority (VIWAPA), St. Thomas
Unit 23- GE Frame 6

I. Unit 23-- 39 MW General Electric Frame 6 Combustion Turbine)- Emission Limits

A. Fuel Oil Usage Limit

1. The total fuel usage for Unit 23 shall not exceed 30,283,320 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 484 million British thermal units per hour (MMBTU/hr).

3. The maximum fuel consumption rate shall not exceed 3,457 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 0.15% sulfur by weight and a nitrogen content of no more than 1000 ppm 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. VIWAPA shall test for the fuel's nitrogen content daily. The fuel sample shall be drawn from the day or the holding tank that supplies fuel oil to this unit.

6. The maximum capacity of Unit 23 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 23 shall be determined in accordance with Condition (I)(A)(6) above.

8. Unit 23 shall not operate at a capacity of less than 25% except during periods of startup and shutdown as specified in paragraphs II B H and II B I.

B. Sulfur Dioxide (SO_2)/Sulfuric Acid Mist

1. Best Available Control Technology (BACT) is the use of No. 2 fuel oil with a sulfur content of no more than 0.15% sulfur by weight.

2. The sulfur dioxide emissions shall not exceed 71.4 pounds per hour (lbs/hr) at all times. The sulfuric acid mist emissions shall not exceed 7.5 lbs/hr.

3. 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 and the requirements in Section II of this permit. Three test runs shall be conducted at four 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 the maximum delivered fuel sulfur content for the prior 12 months and the maximum hourly usage rate for the week. In these calculations, VIWAPA shall assume that all sulfur is converted to SO_2.

C. Nitrogen Oxides (NO_x)

1. BACT is the use of water injection to control NO_x emissions. VIWAPA must use water injection at all times except during periods of startup and shutdown where the load is less than 25% of capacity.

2. NO_x Emission Limits

   NO_x emissions shall not exceed the following at any time:

   a) NO_x emissions shall not exceed 135 lbs/hr calculated as NO_2; and

   b) Concentration of NO_x in the exhaust gas shall not exceed by volume (ppmdv), on a dry basis, corrected to 15% oxygen (as determined by continuous emissions monitoring) 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.

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 daily in accordance with condition (I)(A)(5). The daily 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)(b) and shall remain in effect until the next fuel sample is collected thereby repeating this process. VIWAPA shall also obtain averages of the measured nitrogen oxide concentrations (in ppmdv) and lbs/hr rate for every hour.

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 and the requirements in Section II of this permit. Three test runs shall be conducted at 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.

4. The water-to-fuel ratio for various load conditions will be established during the initial performance testing and reestablished or verified during any subsequesnt testing. The water-to-fuel ratio values contained in the initial performance test reports required to be submitted to EPA, will become enforceable condition of this permit. In addition, they will be incorporated into VIWAPA's operating permit issued by the Virgin Islands Department of Planning and Natural Resources.

D. Carbon Monoxide (CO)

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

2. Emission Limits

CO emissions shall not exceed at any time:

a) CO emissions shall not exceed 81 lbs/hr; and

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 - 29	174
30-79	44
80-99	18
Max	14

3. 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 and the requirements in Section II of this permit. Three test runs shall be conducted for each of the four 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}

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

2. Emission Limits

   The PM/PM_{10} emissions shall not exceed 30 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 and the requirements in Section II of this permit.. Three test runs shall be conducted at four load conditions and compliance shall be based on the average emission rate of these three test runs.

F. Opacity

1. The opacity shall not exceed 17% as determined by continuous emission monitoring except for 3 minutes in any consecutive 30-minute period during which 40% shall not be exceeded.

2. Visual determination of the opacity of emissions from the stack shall be conducted using 40 CFR Part 60, Appendix A, Method 9 and the procedures in accordance with 40 CFR Part 60.11 and the requirements in Section II of this permit.

VOC

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

4. Emission Limits

   VOC emissions shall not exceed the following at any time:

   a) VOC emissions shall not exceed 15 lbs/hr measured as carbon; and

   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 - 29	53
30-Max	9

5. The emission rates of VOC will be tested using EPA Reference Method 25A (40 CFR Part 60, Appendix A) and the requirements in Section II of this permit. 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 at four 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.

II Unit 23 (39 MW- General Electric Frame 6)- Testing Requirements

VIWAPA shall conduct all performance tests for Unit 23 in accordance with the following:

A. Within 60 days after achieving maximum production, but no later than 180 days after initial startup as defined in 40 CFR Part 60.2, VIWAPA shall conduct performance stack tests and submit stack test results, on Unit 23 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.

B. 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.

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

D. Provide permanent sampling and testing facilities as may be required by the EPA to determine the nature and quantity of emissions from Unit 23. Such facilities shall conform with all applicable laws and regulations concerning safe construction and safe practice.

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

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

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

H. Start-up for Unit 23 is defined as a period beginning with the turbine ignition to the generator loading to 25% load. The start-up process shall not exceed 16 minutes in duration.

I. Shutdown for Unit 23 is defined as a period beginning to reduce load from 25% to bringing turbine to no load and zero speed. The shutdown process shall not exceed 20 minutes in duration.

III Unit 23 (39 MW- General Electric Frame 6)- Monitoring Requirements

A. <u>Unit 23</u>

1. Within 180 days of the initial startup of Unit 23 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, NO_x, and opacity.

   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 23, 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 23, 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. VIWAPA shall permit the on-site auditing of the CEMs by independent agents of EPA. 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 time frame 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 23 on a daily basis;

   d) exceedance of emission limits determined by continuous monitoring measured in the appropriate units;

   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

B. 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.

IV. Unit 23 (39 MW- General Electric Frame 6)- Reporting Requirements

A. VIWAPA shall conduct performance stack tests and submit stack test results within 60

days after achieving maximum production, but no later than 180 days after initial startup as defined in 40 CFR 60.2 in accordance with 40 CFR 60.8(a).

B. VIWAPA shall submit a written report of all excess emissions, expressed in both ppm and lbs/hr, 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 an 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.

4. 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.

5. The results of quarterly monitoring performance audits, as required in 40 CFR Part 60, Appendix F (including the Data Assessment Report) and all reporting specified in 40 CFR 60.7 including the submission of excess emissions summary sheets and monitor downtime summary sheets.

C. Upsets/Malfunctions:

1. 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.

2. All upsets/malfunctions 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.

D. 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)(5). These deviations should be made part of the excess emission reports.

E. 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

Director, Caribbean Environmental Protection Division
U.S. Environmental Protection Agency
Region 2 Office
Centro Europa Building, Suite 417
1492 Ponce De Leon Avenue
Santurce, PR 00907-4127
(787) 729-6951

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
(340) 774-3320

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 2 at the address listed above. VIWAPA shall conduct performance stack tests and submit three copies of stack test results within 60 days after achieving maximum production, but no later than 180 days after initial startup as defined in 40 CFR 60.2 in accordance with 40 CFR 60.8(a).

G. In each report quarter, 95% quality data availability shall be maintained for all opacity monitors and 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.

V. Unit 23 (39 MW- General Electric Frame 6)- 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).

C. This PSD Permit shall become invalid if construction; 1) has not commenced (as defined in 40 CFR Part 52.21(b)(9)) within 18 months after the approval takes effect; 2) is discontinued for a period of 18 months or more; or 3) is not completed within a reasonable time.

D. The Regional Administrator (RA) shall be notified in writing of the anticipated date of initial startup (as defined in 40 CFR Part 60.2) of the combustion turbine not more than sixty (60) days nor less than thirty (30) days prior to such date. The RA shall be notified in writing of the actual date of both commencement of construction and startup of the combustion turbine within fifteen (15) days after such date.

E. All equipment, facilities, and systems, including the combustion and electric generation units, installed or used to achieve compliance with the terms and conditions of this PSD Permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. The continuous emission monitoring systems required by this permit shall be on-line and in operation 95% of the time when turbines are operating.

F. Pursuant to Section 114 of the Clean Air Act (Act), 42 U.S.C. §7414, the Administrator and/or his/her authorized representatives have the right to enter and inspect for all purposes authorized under Section 114 of the Act. The permittee acknowledges that the Regional Administrator and/or his/her authorized representatives, upon the presentation of credentials shall be permitted:
   1. to enter at any time upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this PSD Permit;
   2. at reasonable times to access and to copy any records required to be kept under the terms and conditions of this PSD Permit;
   3. to inspect any equipment, operation, or method required in this PSD Permit; and
   4. to sample emissions from the source relevant to this permit.

G. In the event of any changes in control or ownership of facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter, a copy of which shall be forwarded to the Regional Administrator.

Enclosure III- Final Permit
Virgin Islands Water and Power Authority (VIWAPA), St. Thomas
Response to Comments on the Draft PSD Permit for Unit 23

EPA received comments on this draft permit from the MACTEC Engineering and Consultants, VIWAPA's agent, and from the National Park Service.

VIWAPA's Comments

1) Size of Unit

The draft permit has 36 MW listed as the size of the gas turbine generating unit. The actual unit that VIWAPA will install is rated at 39 MW. We request the following changes in the draft permit:

- Unit 23 capacity – 39 MW
- Unit 23 maximum fuel use – 30,283,320 gallons in any consecutive 365-day period (condition I.A.1)
- Unit 23 maximum heat input – 484 million Btu/hr (condition I.A.2)
- Unit 23 maximum hourly fuel use – 3,457 gallons (condition I.A.3)

The increase in the size of the unit will NOT result in any increase in criteria pollutant emissions. The sulfur dioxide emissions will decrease because of the lowering of the sulfur content, even though there is a slight increase in the fuel consumption. For the other pollutants, GE appears to estimate emissions for the Frame 6 series as a whole. (The GE specifications for the unit VIWAPA intends to install show emission rates that are the same as or slightly less than those used in the modeling analysis for the original permit application.) The original application used data from the GE Frame 6 Model 6541. The unit that VIWAPA intends to purchase is a Frame 6 Model 6581. Because the criteria pollutant emissions will not increase for the 39 MW unit, the air quality impacts will not change.

EPA Response: VIWAPA's initial PSD permit application requested a sulfur dioxide limit of 86 lbs/hr based on 0.2% sulfur in fuel. In the proposed permit, EPA included a limit of 64.5 lb./hr because we learned that VIWAPA would be using fuel with 0.15% sulfur. However, this lower rate was based upon a 36 MW unit. VIWAPA has since revised its project proposal to a 39 MW capacity. This increase in the GE Frame 6 combustion turbine's capacity from 36 MW to 39 MW will not result in the increase of any criteria pollutant emissions rates except for sulfur dioxide and sulfuric acid. The emissions for these two pollutants will change from 64.5 and 5 lbs/hr to 71.4 and 7.5 lbs/hr respectively. In addition, the flow characteristics and the exhaust temperature may be affected, which could potentially affect air quality. As such, EPA requested and VIWAPA has provided additional air quality analyses that indicate the air quality impacts will not change and the NAAQS and Class I and Class II increments will be protected. EPA therefore concurs with this comment and has revised the Project Description and the permit conditions I.A.1, I.A.2 and I.A.3. Please see our response to comment 2 regarding sulfur dioxide emissions.

2) Correction to SO_2 Emission Limits

In the November 5 e-mail, we also advised EPA that we would accept a reduction in fuel oil sulfur content to 0.15% after receiving written confirmation of such a guarantee from our supplier, Hovensa. The following changes were identified in the November 5 e-mail and are requested due to the change in the maximum sulfur content:

- Unit 23 maximum sulfur dioxide emissions – 71.4 pounds per hour (condition I.B.2)
- Unit 23 maximum sulfuric acid emissions – 7.5 pounds per hour (condition I.B.2)

EPA Response: EPA concurs with this comment and has revised permit condition I.B.2.

3) Oxygen Content/Load Ranges

EPA requested and MACTEC provided GE data for CO and VOC concentrations at various loads. The CO and VOC data provided to EPA was NOT converted to 15% O_2 and the VOC data was NOT converted to dry conditions. The requested changes are as follows:

Condition I.D.2.b – the CO concentrations listed in the draft permit represent actual oxygen content; the concentrations at 15% oxygen for each load range are 0-29=174; 30-79=44; 80-99=18; and max=14 and

Condition I.F.4.b – the percent loads should be 0-29 and 30-max; the VOC concentrations listed in the draft permit represent actual conditions; the dry concentrations at 15% oxygen are 0-29=53 and 30-max=9.

EPA Response: EPA concurs with this comment and has revised the permit conditions I.D. 2.b and I.F. 4.b.

4) Fuel Oil Monitoring Methodology-1

VIWAPA is requesting the use of an alternate method to monitor and document compliance with the SO_2 emission limits. With this alternate method, the weekly testing required in the draft permit would be eliminated. Since SO_2 emissions are directly linked to the sulfur content of the fuel, VIWAPA seeks a change in the draft permit (condition I.B.3) to allow documentation of the maximum delivered fuel oil sulfur content for the prior 12 months, along with the maximum hourly fuel usage rate for each week, to demonstrate compliance with the SO_2 emission limit of 71.4 pounds per hour. Since both BACT for SO_2 and the allowable SO_2 emission rate were predicated on those two limits (i.e. fuel sulfur content and fuel consumption rate) there is no need, or technical justification, for monitoring of any other parameters, except for emission concentration and mass emission rate calculations during stack testing (to which the Authority has no objection).

EPA Response: VIWAPA should note that weekly testing of the fuel oil's sulfur content is not required in the draft permit or in the final permit issued today. VIWAPA should test for the oil's sulfur content upon delivery or rely on the supplier's invoice and use that information to

calculate a maximum delivered fuel sulfur content for the previous 12 months. EPA concurs with this comment and has clarified the permit condition I.B.3 and I.A.5.

5) Fuel Oil Monitoring Methodology- 2

The same principles apply to the monitoring of compliance with NOx-related requirements. Both BACT and emission limitations for NOx are predicated on nothing more or less than the purchase of fuel from Hovensa with guaranteed nitrogen levels at or below 1000 ppm, and the continuous use of proper water injection rates. Consequently, with the exception of emission concentration and mass emission rate calculations during performance testing (to which the Authority has no objection), there is no justification for compliance monitoring going beyond the continuous tracking of these parameters. However, in order to document monthly and annual NOx emissions, VIWAPA is willing to use an accurate method to determine the average monthly nitrogen in fuel level. We are not in a position to propose a definitive procedure at this time; however, we believe that a timed peristaltic pump collecting one liter of oil per month at a point just prior to the Unit 23 injection nozzles would be considerably more accurate than four fuel oil samples taken during the month from one or more storage tanks and averaged.

EPA Response: EPA disagrees with this comment. EPA understands VIWAPA's contention that the nitrogen oxide emissions are predicated on the fuel's nitrogen level and the use of water injection rates. However, nitrogen oxide levels may vary depending on how well the control over combustion and the water injection rates is maintained. Further, EPA notes that the fuel's nitrogen content will also vary and may be much below 1000 ppm. The water injection rates will be determined during the performance test at which time the fuel's nitrogen content may not be at 1000 ppm, the highest nitrogen content fuel permitted. At the time the draft permit was issued, EPA required VIWAPA to comply with an instantaneous and a long term emission limit to account for the infrequent fuel oil sampling provided to determine the nitrogen content and to account for the difficulties in determining the corresponding adjusted limit.

Unit 23 is subject to 40 CFR 60 Subpart GG, which was revised on July 8, 2004, after issuance of the draft permit. Subpart GG now requires VIWAPA to sample fuel oil daily to determine the fuel's nitrogen content. This increase in the frequency of sampling eliminated EPA's concerns regarding the uncertainty over the potential variability of the fuel's nitrogen content and the application of the Subpart GG hourly averaging period requirement. Therefore, this final permit, requires VIWAPA to meet the NOx emission limit on an hourly basis. - see "EPA initiated changes to this permit in #16 below."

As described in the comment, VIWAPA may install a system, after EPA approval, to obtain more representative samples to determine the fuel's nitrogen content. EPA also notes that the fuel oil with lower than 1000 ppm nitrogen content could be available due to inherent variability in the crude oil quality and the process output. Therefore, EPA has included a sliding scale to account for lower nitrogen fuel deliveries.

6) NOx Limits- 1

The equation for defining an allowable NOx emission limit in condition I.C.2.c is applicable for nitrogen in fuel levels greater than 150 ppm. For levels of 150 ppm and less, the NOx limit is 42 ppm. This change needs to be made in the draft permit.

EPA Response: EPA concurs with this comment and has revised the permit condition I.C.2.c.

7) NOx limits- 2

The Authority notes that it would not be possible to demonstrate compliance with a mass emission rate for NOx as the Agency proposed in condition I.C.3. The monitoring equipment and the laboratory analysis procedures are simply NOT accurate enough to make this kind of compliance demonstration with mass emission rates. Any such calculation to estimate actual long-term emission rates could only be used as an indicator of emissions and not as a determinate of compliance. There is an inherent "error" in the oxygen and NOx monitors when they meet the accuracy requirements of the EPA PST Specification A and B, respectively. The laboratory analysis for the fuel oil (hydrogen/carbon content, BTU value and density) provides additional error. For example, for a 74 pound per hour actual emission rate, the calculated value as prescribed by the equations in condition I.C could range from 48 to 117 pounds per hour considering the errors just described for monitors that meet all daily calibration checks and the variation in laboratory analysis results. If EPA were to insist on this calculation technique, it would be required, at a minimum, to incorporate a 1.65 safety factor into any value calculated in this manner.

EPA Response: EPA disagrees with VIWAPA's contention that it would not be possible to demonstrate compliance with a mass emission rate for NOx as the Agency proposed in condition I.C.3. EPA's and many states' permits require that the permittee meet emission limits in ppm and pounds per hour using the NOx/Oxygen monitors even on a shorter term basis. Those permittees routinely comply with these conditions. It is noted that VIWAPA did not provide any data or documents to support its claim that the inherent errors occur and if VIWAPA's rationale is to be believed, these errors should have caused all permittees to be in non-compliance all the time. As such, the requirement in this final permit to determine nitrogen content in the fuel on a daily basis and monitor NOx concentration with a CEM coupled with emission limits based on VIWAPA's engineering estimates will provide an adequate factor of safety. Most manufacturers include an adequate safety factor which is often endorsed by EPA. VIWAPA has provided no information to EPA on what the manufacturer's safety factor is in this case. The 65% factor sought by VIWAPA is far out of the 10% safety factor which is the range EPA has historically found acceptable. EPA has determined that a 65% safety factor is overly protective of VIWAPA's ability to comply and will result in unnecessary additional emissions to the environment. In addition, EPA has determined that VIWAPA has not demonstrated that a 65% safety factor is necessary to account for measurement errors in instruments.

8) Unit 23 CEMS- 1

We indicated earlier in these comments that the Governor filed a petition almost two years ago for the elimination of the requirement for CEMS for all units and all generating stations. It is of paramount importance that the requirement for CEMS be addressed as part of the Unit 23 permit. The cost for a continuous monitoring system to handle the gaseous pollutants is enormous to VIWAPA, i.e., about $150,000 for the instrumentation/installation and about $100,000 for the compliance certification and activation process. This $250,000 expenditure is an extraordinary expense for a system that is NOT a regulatory requirement. Moreover, as the Governor's petition (Attachment B), and the Authority's supplementation of information supporting the petition (Attachments C and D) made clear—

> There is no legal requirement for the imposition of CEM requirements in PSD permits issued to the Authority. There are significant geographic and economic reasons, unique to the Virgin Islands, that make it impossible for the Authority to satisfy EPA's CEMS data availability guidelines. The Authority has, at great expense, already installed a voluntary system for monitoring the operational limits that constitute BACT for the emissions that the existing and proposed CEMS would monitor. That system satisfies all EPA standards for appropriate monitoring of NSPS and NOx RACT emission requirements, and is both far more reliable and less costly to maintain. For example, existing NSPS regulations that impose water injection requirements for NOx control do not require CEMS, but only the tracking of compliance with appropriate water injection rates (a monitoring scheme identical to the alternative proposed by VIWAPA).
>
> Because of the unique difficulties of maintaining CEMS in the remote location of the Virgin Islands, no CEMS vendor is willing to guarantee that its equipment can meet the data availability requirements in the Authority's existing PSD permits, let alone the higher data availability requirements proposed in the draft permit.
>
> The complete absence of any threat to ambient air quality standards or PSD increments from a less than perfect estimate of NOx emission rates. That is, the tracking of compliance with the operating parameters that constitute BACT provides a more than adequate guarantee that ambient air and increment standards will continue to be satisfied.

EPA Response: At the outset we note that VIWAPA's Section 325 Petition process and this PSD permit process involve distinct procedures with different applicable standards. CEMS are a matter of effective PSD permit writing and they are a necessary means to determine whether BACT is being complied with. EPA has routinely required CEMS in its PSD permits (e.g., PREPA San Juan Combined Cycle Project, EcoElectrica).

EPA policy requires EPA to state in the permit how compliance with each limitation will be determined. According to EPA's Draft New Source Review Workshop Manual, "where continuous, quantitative measurements are infeasible, surrogate parameters must be expressed in the permit." VIWAPA has not demonstrated that continuous, quantitative measurements are infeasible. EPA believes that CEMS are indeed feasible. CEMs have been in use at all major turbines installed in

the past decade and are being used at HOVENSA, a major facility on St. Croix. CEMs are also effectively being used on many units in Puerto Rico which has a location and climate similar to the Virgin Islands. In addition, while there is no presumptive cost per ton figure for BACT, it is not unusual for BACT to result in a cost per ton removal of NOx of about $10,000. The BACT established in this permit combined with the CEMS necessary to ensure compliance with the BACT limit will not come close to exceeding this number.

VIWAPA has alleged certain expenses in the context of the Clean Air Act Section 325 waiver but its argument has not been presented in terms of economic infeasibility under EPA's BACT criteria. The record does not support a finding of economic or technological infeasibility. Therefore, there is no basis for a surrogate measurement parameter such as the method suggested by VIWAPA. Even if the Governor of the Virgin Island's CAA § 325 Petition to exempt VIWAPA from CEMS conditions in its PSD permits (Petition) were to be granted with respect to Unit 23, the CEMS conditions will remain in this Permit. Such a grant, if made, would exempt VIWAPA from its obligation to comply with the CEMS requirements in the permit for the duration of the term of the Grant, not remove those requirements from the PSD permit.

9) Unit 23 CEMs- 2

There is no technical or programmatic justification for requiring both CEMS AND continuous tracking of water injection rates, fuel consumption and delivered fuel nitrogen levels. Since BACT is defined directly in terms of fuel nitrogen limits, fuel burning rates and proper water injection, there is no justification for the monitoring of any other parameters. In essence, the draft permit proposes both direct monitoring of all pertinent aspects of BACT (to which the Authority has no objection), AND an imperfect, unattainable and horribly costly INDIRECT monitoring of the predicted (but inexact) emission rates that the BACT controls are expected to produce. Given the clear absence of any threat to ambient air standards for NOx or CO, there is no basis for this extra layer of indirect and imperfect monitoring of compliance with BACT.

Clearly, the key to controlling nitrogen oxides emissions for this unit is maintaining the correct water/fuel injection ratio. For the other pollutants, the only control measure possible is to use No. 2 fuel oil with a maximum sulfur content of 0.15% by weight and maintain good combustion practices at all times. No other possible control can be achieved downstream of proposed Unit 23. As you know there are no violations of the ozone air quality standard in this entire area, including the metropolitan areas of Puerto Rico. NOx air quality levels are also well below the NAAQS. Even if NO controls were applied, the air quality standards and PSD increments would be maintained.

At the very minimum, EPA should waive or stay any requirement for the installation of CEMS on Unit 23 until such time as it makes a final decision on VIWAPA's petition to eliminate CEMS requirements for all its units. The other conditions in the draft permit are adequate to ensure that Unit 23 will meet all NOx limits until a decision is reached by EPA.

EPA Response: VIWAPA's proposed Unit 23 is subject to both the PSD and NSPS regulations. PSD and NSPS are independent rules that VIWAPA will need to comply with on a regular basis. In order to assure continuous compliance with the emission limits, PSD regulations give EPA the authority to require the best possible monitoring device. EPA, therefore, requires a CEM which makes direct measurement of emissions. The NSPS rules also require that appropriate water injection rates be maintained based on stack testing to ensure that nitrogen oxide emission levels are complied with. EPA's permit conditions requiring both the CEM and water injection rates would ensure that emissions are also controlled efficiently at loads lower than the maximum for which the emission limits are set. Note that the water injection rates do not measure actual emissions, whereas, BACT, as expressed as an emission rate, needs to be complied with using CEMS that measure actual emissions. Further, note that BACT and the NAAQS, both need to be met independently of each other. EPA cannot waive the BACT requirement simply because there is no threat to the NAAQS. Further, only the EPA Administrator can grant an exemption from a requirement of the CAA, such as a PSD condition. PSD regulations do not provide such an authority. Likewise, PSD regulations also do not authorize issuance of a stay while a CAA § 325 Petition is pending. As mentioned in response to comment # 8 above, even if the Petition were to be granted with respect to Unit 23, the CEMS requirements will remain in this Permit. Since EPA is not removing the CEMS requirements, VIWAPA's other comment relating to 95%/90% data quality and the CT system unavailability is not applicable.

10) Definition of Maximum Capacity

Because all of the vendor's emission rate information, on which the proposed emission rates are predicated, were based on the vendor's design capacity of the new unit, all emission rates that vary with percent load, or percent of capacity, should be calculated on the basis of the design capacity of 39 MW. No other interpretation would be technically consistent with the development of the permit. This is the same issue that the Authority raised with Region 2 in connection with its request for clarification/modification of the Unit 22 permit on November 29, 2002, and with which Mr. Riva agreed in his responsive letter of February 12, 2003.

EPA Response: EPA concurs with this comment that all emission rates that vary with percent load, or percent of capacity, should be calculated on the basis of the design capacity of 39 MW.

11) Future Recalculations of Water Injection Rates

Recognizing that future changes in the water injection system could require recalibration of injection rates, it is important for the permit to allow the re-establishment of proper injection rates during stack testing that may be performed subsequent to the initial performance tests. Consequently, we have requested modifications that would permit this to take place. Also, the need for future adjustments in the required injection rates makes it inappropriate to incorporate the injection rates in the Authority's Title V permit. The process for modifying the Title V permit is too slow and cumbersome to provide the flexibility that is needed here. The Authority believes that the enforceability of the provisions in the PSD permit itself provide all the enforceability that is reasonably required, and has, therefore, proposed the deletion of any requirement that the established

injection rates be incorporated in the Title V permit.

EPA Response: EPA cannot pre-approve any future changes in the water injection system and recalibration of injection rates. The water injection system and the water injection rate associated with it will have an impact on BACT , and any change in the BACT determination will require EPA approval. VIWAPA should note that the water injection rates determined by stack testing pursuant to this permit shall become part of this permit and be incorporated in VIWAPA's Title V permit. Any comments VIWAPA may have about Title V permit conditions must be addressed when the Title V permit is renewed. VIWAPA cannot use the PSD permit process to eliminate Title V permit requirements. Further, note that VIWAPA will have the flexibility to use the water injection rates determined during any subsequent stack testing as long as VIWAPA submits a complete Title V permit revision application on a timely basis.

12) Elimination of Duplicate Reporting Under NSPS

In order to avoid unnecessary and duplicative reporting of compliance with water injection requirements, the Authority is requesting an express waiver of the reporting of compliance with injection rates under NSPS. The injection rates required by the PSD permit are far more stringent than those required by NSPS. Consequently, the quarterly reporting of compliance under the permit should be deemed to satisfy all NSPS requirements as well.

EPA Response: VIWAPA will need to comply with both the PSD and the NSPS regulations. EPA cannot, through permit actions, amend the reporting requirements of the NSPS regulations.

The National Park Service's Comments

14) The National Park Service comment- 1

Best Available Control Technology (BACT) Analysis

NO_x: VIWAPA has proposed using water injection with a limit of 42ppm (plus an adjustment for fuel-borne nitrogen) NO_x, when burning oil. We agree that this represents BACT for a simple cycle turbine burning oil.

SO_2: VIWAPA proposes to burn low-sulfur fuel oil with a sulfur content of 0.15%. All of the oil-fired turbine permit applications on the US mainland we have reviewed in the last two years (Tenaska-Fluvanna and Bear Garden, Dynegy-Chickahominy, Southern-MacIntosh, FPL-Turkey Point) the applicants have proposed, or accepted, use of ultra-low sulfur oil (0.015%) as BACT. VIWAPA should have demonstrated why such ultra-low sulfur oil, which has been mandated by EPA for on-road use in 2006-07, is neither available nor BACT for this facility.

EPA Response: VIWAPA receives its fuel oil from HOVENSA, a sole supplier in the Virgin Islands. HOVENSA currently can supply fuel oil that may contain a maximum of 0.15% sulfur. Ultra-low sulfur oil (0.015% or lower) is not available in St. Thomas. Hovensa does supply a lower sulfur diesel fuel (0.05%), but the incremental cost analyses demonstrate that the cost per ton is out of the range for BACT for sulfur dioxide for this unit. Therefore, EPA concluded that 0.15% sulfur oil is BACT for this unit.

15) The National Park Service comment- 2
Best Available Control Technology (BACT) Analysis

The proposal represents BACT for NO_x, while the use of oil with 0.15% sulfur would not represent BACT if this source were built on the US mainland. The NPS would appreciate a permit condition that Unit #23 switch to ultra-low sulfur oil, when it becomes available on St. Thomas.

EPA Response: EPA's regulatory policy requires that any BACT determination in a PSD permit condition be based on current availability of fuel. The BACT is established at the time of permitting. Therefore, EPA cannot incorporate a permit condition that would require VIWAPA to switch to ultra-low sulfur oil, if and when it becomes available on St. Thomas.

EPA initiated changes to this permit

16) *Fuel Oil Sampling Frequency/NOx limits-*

On July 8, 2004, EPA promulgated revisions to 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines. The revised Section 60.334(i)(1) states that,"If an emission allowance is claimed for fuel bound nitrogen, the nitrogen content of the oil shall be determined and recorded once per operating day". VIWAPA is claiming such an allowance. EPA, therefore, revised condition 1.A.5, 1.C.2 and I.C.3 accordingly. Specifically, the nitrogen in fuel sampling requirement has now been changed from "at least four fuel oil samples in a month" to determining the nitrogen content of the fuel oil on a daily basis. This increased frequency in sampling eliminated EPA's concerns regarding the uncertainty over the potential variability of the fuel's nitrogen content and the application of the Subpart GG hourly averaging period requirement. Therefore, EPA eliminated the long term emission averaging period from I.C.2 and now included an hourly average period consistent with the Subpart GG hourly averaging requirement. Further, VIWAPA is also claiming allowance for fuel bound nitrogen and, therefore, I.C.2 continues to requires that VIWAPA determine its NOx limit using the equation in I.C.2.b. Note that the sampling location and test method have not changed.

17) *Test Report Submittal-*

EPA revised conditions IV.A and IV.F to reflect the reporting requirements in 40 CFR 60.8(a) as follows:" VIWAPA shall conduct performance stack tests and submit stack test results within 60 days after achieving maximum production, but no later than 180 days after initial startup as defined in 40 CFR 60.2 in accordance with 40 CFR 60.8(a)."

18) *Changes to clarify the conditions-*

The permit conditions I.C.1 and I.C.4 have been re-written for clarification purposes.