



NRO-094-10

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### NORTHERN REGIONAL OFFICE

Douglas W. Domenech  
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193  
(703) 583-3800 Fax (703) 583-3821  
www.deq.virginia.gov

David K. Paylor  
Director

March 05, 2010

Mr. Hossein Fateh  
Managing Member  
Lemur Properties, LLC  
1707 H. St. NW  
Suite 1000  
Washington, D.C. 20006

Location: Reston  
Registration No.: 73162

Dear Mr. Fateh:

Attached is a minor amendment to your New Source Review permit dated July 12, 2004 to construct and operate multiple diesel engine driven generator sets at your data server facility located at 1780 Business Center Drive in Reston, VA. This amendment is issued in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). This permit supersedes your permit dated July 12, 2004.

This permit contains legally enforceable conditions. Failure to comply may result in appropriate enforcement. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on February 23, 2010.

This permit approval to modify and operate shall not relieve Lemur Properties, LLC of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code (VAC) 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within thirty days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 also provides that you may

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request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director  
Department of Environmental Quality  
P. O. Box 1105  
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the regional office at 703.583.3800.

Sincerely,



Terry H. Darton  
Regional Air Permit Manager

TAF/THD/EHA/10-094-mnsr

Attachments: Permit

cc: Mr. Dan Hopkins (electronic communication)  
Director, OAPP (electronic file submission)  
Manager/Inspector, Air Compliance  
File



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David K. Paylor  
Director

Thomas A. Faha  
Regional Director

## STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Lemur Properties, LLC  
1707 H. St. NW, Suite 1000  
Washington, D.C. 20006  
Registration No.: 73162

is authorized to modify and operate:

Eighteen engine-generator sets

located at:

1780 Business Center Drive  
Reston, VA 20190

in accordance with the Conditions of this permit.

Approved on: March 05, 2010

A handwritten signature in black ink, appearing to read "T. Faha".

Thomas A. Faha,  
Regional Director

Permit consists of 11 pages.  
Permit Conditions 1 to 24

## **INTRODUCTION**

This permit approval is based on the letter request dated February 23, 2010 and the permit applications dated December 15, 2003, January 7, 2003, and July 10, 2000, with supplementary information received on September 5, 2000, October 25, 2000, and December 11, 2000. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-80-1110 (definitions) and 9 VAC 5-10-20 of the State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the Department of Environmental Quality (DEQ) or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

## **PROCESS REQUIREMENTS**

1. **Equipment List** – Equipment at this facility consists of the following:

<b>Equipment permitted prior to the date of this permit:</b>			
<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Emission Controls</b>	<b>Original Permit Date</b>
Twelve (12) Caterpillar Rotary Power Engine-Generator Sets, Model #3516B	2060 kW	140-degree Fahrenheit after cooler low emission package	07/14/04
Six (6) Caterpillar Diesel Engine-Generator Sets, Model # 3516B	2060 kW	140-degree Fahrenheit after cooler low emission package	07/14/04

<b>Equipment exempt from air permitting:</b>			
<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Exemption Citation</b>	<b>Exemption Date</b>
Two (2) natural gas, horizontally fired boilers	3.05 MMBtu/hr	9 VAC 5-80-1320.B.1.d	07/14/04

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit unless the specifications are needed to form the basis for one or more of the other terms or conditions in the permit.  
(9 VAC 80-1180 D 3)

### **OPERATING/EMISSION LIMITATIONS**

2. **Emissions Control** – Emission of nitrogen oxides (NO<sub>x</sub>) from each engine shall be controlled by the manufacturer's low NO<sub>x</sub> emission package as listed in Condition 1. The diesel generator sets and rotary power systems shall be provided with adequate access for inspection.  
(9 VAC 5-50-260)
3. **Operating Scenarios for Engine Generator Sets and Rotary Power Systems-**
  - a. **Emergency / Critical Power Generation:**
    - i. **Emergency:** The engine-generator sets and rotary power systems may be operated in situations where immediate action on the part of the facility is needed due to a failure or loss of electrical power service resulting from a failure of the primary power provider and the failure or loss of power service is beyond the reasonable control of the facility. Operation under these circumstances shall be allowed for the period of time the primary electrical power provider service is unavailable. Once primary electrical power provider service is available the engine-generator sets and rotary power systems may be operated in accordance with Critical Power Generation as defined below.
    - ii. **ISO-Declared Emergency:** The engine-generator sets and rotary power systems may be operated for participation in an Independent System Operator's (ISO) Emergency Load Response Program (ELRP) during times of an ISO-declared emergency, as defined in the ISO's emergency operations manual. Operations under this scenario shall not exceed 60 hours per engine each calendar year.
    - iii. **Critical Power Generation:** The engine-generator sets and rotary power systems may be operated in situations where immediate action on the part of the facility is needed due to a loss or anticipated loss of acceptable electrical

power service from the primary provider and the loss or anticipated loss of power service is beyond the reasonable control of the facility. Operation under these circumstances shall be allowed until such time as acceptable power provider service is restored or the loss of acceptable power provider service is no longer reasonably anticipated

- b. **Alternate Power Generation:** Except as specified in subsection 3.c below, an engine-generator set and/or rotary power system may be operated voluntarily for the purposes of peak-shaving, demand response, or as part of an interruptible power supply arrangement with a power provider, other market participant, or system operator if the engine is equipped with a selective catalytic reduction system (SCR) that achieves the manufacturer's guaranteed maximum emission reductions based on fuel type. Operations, as outlined in this subsection, shall be allowed when the engine-generator set or rotary power system is operating at a load level necessary to sustain urea injection. Prior to construction of an SCR unit, when changing from Emergency Power Generation or Critical Power Generation to Alternate Power Generation, the permittee shall submit appropriate documentation to the Department of Environmental Quality (DEQ), and receive DEQ approval for the change in the method of operation of the engine-generator set or rotary power systems to ensure that the facility remains in compliance with the appropriate permitting requirements.
- c. The engine-generator sets and rotary power systems may be operated for periodic maintenance, testing, and operational training.

Total emissions for any twelve month period, calculated as the sum of all emissions from operations under scenarios 3.a. through 3.c above, shall not exceed the limits stated in Condition 8.

(9 VAC 5-80-1180 D)

- 4. **Fuel Specifications** – The rotary power systems and diesel generator sets shall use only No. 2 fuel oil conforming with American Society for Testing and Materials standards for numbers 1 and 2 fuel oil and having a sulfur content not to exceed 0.5 percent by weight per shipment. The permittee shall maintain records (supplier fuel analysis) of all oil shipments purchased. These records shall be current for the most recent five years.  
(9 VAC 5-80-1180)
- 5. **Fuel** – Fuel for the two comfort heating boilers is limited to natural gas. A change in fuel type may require a permit. Records of annual consumption shall be kept.  
(9 VAC 5-80-1180)
- 6. **Emission Limit** – Emissions from each rotary power diesel generator set and each diesel generator set shall not exceed an emission rate of 0.024 lb./kWh expressed

as nitrogen dioxide (NO<sub>2</sub>), based on the average of three one hour test runs. To calculate kWh, multiply %Engine Load, recorded at the Engine Control Panel, by the nameplate power rating of the engine for a one-hour run. During performance testing the rotary power system and emergency generator air emissions shall be determined when the diesel engines are operating at load of twenty-five percent load or more.

(9 VAC 5-50-260 and 9 VAC 5-60-320)

7. **Emissions Limit** – Emissions of nitrogen oxides from the two boilers shall not exceed 1.25 tons per year. While these boilers are unregulated, the emissions must be recorded for emission inventory purposes. Emissions of nitrogen oxides shall be calculated from the number of cubic feet of natural gas burned and the appropriate EPA emission factor from AP-42.

(9 VAC 5-50-260 and 9 VAC 5-60-320)

8. **Emission Limit** – Emissions of nitrogen oxides from the engine-generators shall not exceed 47.75 tons per year. The emissions shall be calculated monthly as the sum of each preceding twelve consecutive months according to the following equations:

$$47.75 \frac{\text{tons NO}_x}{\text{year}} \geq F * C_v * \frac{1 \text{ MMBtu}}{1,000,000 \text{ Btu}} * ER * \frac{1 \text{ ton}}{2,000 \text{ lbs.}}$$

Where

F = Amount of No. 2 fuel oil consumed annually (gallons/year)

C<sub>v</sub> = Heat Content of the No. 2 fuel oil utilized (Btu/gallon)

ER = Emission Rate for each operating load, to be determined through testing (lbs. NO<sub>x</sub> / MMBtu)

The annual NO<sub>x</sub> emission rate shall be calculated for each operating load and its corresponding fuel throughput. Operating load is to be defined as the percent load of the engine as recorded at the engine control panel.

(9 VAC 5-80-1180)

9. **Facility Emission Limit** – Total annual emissions of nitrogen oxides, that includes the rotary power sets, diesel generator sets, and the two boilers, shall not exceed 49 tons per year, calculated monthly as the sum of each preceding twelve consecutive months.

(9 VAC 5-50-260 and 9 VAC 5-60-320)

10. **Visible Emission Limit** – Visible emissions from the diesel engines, rotary power systems and the boilers shall not exceed 20 percent opacity as determined by Method 9 (reference 40 CFR 60, Appendix A), except for one six minute period in any one hour which shall not exceed 30 percent opacity. This condition applies at all times except during start-up, shutdown, and malfunction.  
(9 VAC 5-50-20 and 9 VAC 5-50-80)
11. **Testing/Monitoring Ports** – The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.  
(9 VAC 5-50-30 F)

### **COMPLIANCE TESTING**

12. **Performance Testing** – Upon request by the DEQ, the permittee shall conduct additional performance testing of the engine-generator sets and rotary power systems to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address listed in Condition 14.  
(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

### **MONITORING/RECORDKEEPING**

13. **Monitoring** – The diesel generator sets and rotary power systems shall be equipped with devices to continuously measure and record the operating loads and associated hours of operation, total fuel usage, and the fuel usage rates. Each monitoring device shall be installed, maintained, calibrated, and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the diesel generator sets are in operation. In the event that a monitoring device is not functioning properly during engine operation, fuel consumption and operating loads shall be manually recorded on an hourly basis by the operations staff for the duration of engine operation.  
(9 VAC 5-80-1180, 9 VAC 5-50-20 C, and 9 VAC 5-50-260)
14. **Recordkeeping** – The permittee shall maintain records on site of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's Northern Regional Office (NRO) at the following address:



Regional Air Compliance Manager  
Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

These records shall include, but are not limited to the following:

- a. The total amount of nitrogen oxides, expressed as NO<sub>2</sub>, emitted from the engines and the boilers, calculated monthly as the sum of the previous consecutive twelve months, as required on Condition 7 and 8. These records shall be reported within thirty days after each calendar quarter to the Regional Air Compliance Manager of the DEQ's NRO.
- b. The number of gallons of fuel oil burned per year at each operating load, calculated monthly as the sum of the previous consecutive twelve months, as required in Condition 4.
- c. The emission factor curve correlating it to operating loads to emission factors for the engines.
- d. The total cubic feet of natural gas burned annually by the boilers, as required in Condition 5.
- e. Receipts of oil shipments purchased, indicating that the fuel oil conforms to the ASTM standards for fuel oils number 1 and 2, as required in Condition 4.
- f. Monitoring device records of the engine operating loads, associated hours of operation for each load, and total fuel usage as required in Condition 13.
- g. A record of the date, reason engines operated (as defined in Condition 3), engine run time, percent load, and fuel usage.
- h. Scheduled and unscheduled maintenance and operating training.
- i. All stack tests, visible emission evaluations and performance evaluations.
- j. Operating procedures and operator training records for all air pollution related equipment.

These records shall be available for inspection by the DEQ and be current for the most recent five years.

(9 VAC 5-20-160 and 9 VAC 5-50-50)

## **NOTIFICATION**

**15. Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO (at the address listed in Condition 14) of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least twenty-four hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

- a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;
- b. The expected length of time that the air pollution control equipment will be out of service;
- c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
- d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

(9 VAC 5-20-180)

**16. Notification for Facility or Control Equipment Malfunction** – The permittee shall notify the Regional Air Compliance Manager of the DEQ's NRO (at the address listed in Condition 14), of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone, electronic communication, or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours of the malfunction. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks days of the occurrence. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Air Compliance Manager of the DEQ's NRO in writing.

(9 VAC 5-20-180)

## **GENERAL CONDITIONS**

### **17. Certification of Documents –**

a. The following documents submitted to the Board shall be signed by a responsible official: (i) any emission statement, application, form, report, or compliance certification; (ii) any document required to be signed by any provision of the regulations of the Board; or (iii) any other document containing emissions data or compliance information the owner wishes the Board to consider in the administration of its air quality programs. A responsible official is defined as follows:

i. For a business entity, such as a corporation, association or cooperative, a responsible official is either:

A). The president, secretary, treasurer, or a vice president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or

B). A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars) or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.

ii. For a partnership or sole proprietorship, a responsible official is a general partner or the proprietor, respectively.

iii. For a municipality, state, federal, or other public agency, a responsible official is either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of the principal geographic unit of the agency.

b. Any person signing a document under subsection a. above shall make the following certification:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the*

*information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

- c. Subsection b. shall be interpreted to mean that the signer must have some form of direction or supervision over the persons gathering the data and preparing the document (the preparers), although the signer need not personally nor directly supervise these activities. The signer need not be in the same line of authority as the preparers, nor do the persons gathering the data and preparing the form need to be employees (e.g., outside contractors can be used). It is sufficient that the signer has authority to assure that the necessary actions are taken to prepare a complete and accurate document.
- d. Any person who fails to submit any relevant facts or who has submitted incorrect information in a document shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

(9 VAC 5-20-230)

**18. Permit Suspension/Revocation** - The Board may suspend or revoke any permit if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the terms or conditions of this permit;
- c. Fails to comply with any emission standards applicable to an emissions unit included in this permit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the implementation plan in effect at the time that an application is submitted; or
- e. Fails to comply with the applicable provisions of 9 VAC 5-80-1100 et seq.

(9 VAC 5-80-1210 F and 9 VAC 5-80-1210 G)

**19. Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency. (9 VAC 5-170-130 and 9 VAC 5-80-1180)

**20. Violation of Ambient Air Quality Standard** - Regardless of any other provision of this permit, the permittee shall, upon request of the DEQ, reduce the level of operation of the facility if the DEQ determines that is necessary to prevent a violation of any primary ambient air quality standard. Under worst case conditions, the DEQ may order that the permittee shut down the facility, if there is no other method of operation to avoid a violation of the ambient air quality standard. The DEQ reserves the right to prescribe the method of determining if a facility will cause such a violation. In such cases, the facility shall not be returned to operation until it and the associated air pollution control equipment are able to operate without violation of any primary ambient air quality standard. (9 VAC 5-20-180 I)

**21. Maintenance/Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.

- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.  
(9 VAC 5-20-180 and 9 VAC 5-50-20 E)

- 22. Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Permit Manager of the DEQ's NRO of the change in ownership within thirty days of the transfer.  
(9 VAC 5-80-1240)

- 23. Registration/Update** - Annually the permittee will be required to provide information to the DEQ or the Board, which will be used to maintain the currency of the stationary source emission database. The information requested may include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.  
(9 VAC 5-20-160, 9 VAC 5-40-5320, and 9 VAC 5-170-60)

- 24. Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.  
(9 VAC 5-170-160)