



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard, Virginia Beach, Virginia 23462

(757) 518-2000 Fax (757) 518-2009

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Maria R. Nold
Regional Director

August 7, 2015

Mr. L. David Fetty
Assistant Property Manager
Sentara Healthcare
800 Independence Boulevard
Virginia Beach, Virginia 23455

Location: Virginia Beach
Registration Number: 60353

Dear Mr. Fetty:

Attached is a permit to construct and operate a healthcare office facility (Sentara's data center) in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit supersedes the April 11, 2014 permit.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty. 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 June 10, 2015.

This permit approval to construct and operate shall not relieve Sentara Healthcare 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 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 calendar days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 provides that you may 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 30 calendar 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
PO Box 1105
Richmond, VA 23218-1105

If this permit was delivered to you by mail, three (3) 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.

Although it has been determined that the two (2) 750 kilowatt (kW) emergency generators G-1 and G-2 located at the facility are exempt from the permitting requirements of Chapter 80, Article 6 of the Virginia Regulations for the Control and Abatement of Air Pollution, the emergency generators shall be operated only for the purpose of providing power during the interruption of service from the normal power supplier, periodic maintenance testing, and operational training. These emergency generators shall not be operated voluntarily for the purpose of peak-shaving, demand response, or as part of any other interruptible power supply arrangement with a power provider, other market participant, or system operator, without first receiving permission from the DEQ. The two (2) emergency generators may each not exceed 500 operating hours per year as such operation ensures that pollutant emission levels will remain below permit exemption rates for the generator. While the two (2) emergency generators are not subject to permitting requirements, they are still subject to the registration requirements of 9 VAC 5-20-160 of the Regulations and subject to periodic inspections by the Department. You are cautioned that this decision also should not be construed to mean that operation of the emergency generators are automatically in compliance with all aspects of the Regulations for the Control and Abatement of Air Pollution. DEQ Tidewater Regional Office personnel will be constantly evaluating all sources for compliance with the Regulations. The permittee shall keep records in accordance with 9 VAC 5-80-1320 A.4 as may be necessary to demonstrate to the satisfaction of the Department the continued exempt status of each emergency generator. Records shall include, but are not limited to, the monthly hours of operation and reason for emergency operation, testing of the unit, and/or maintenance.

The 1,180 BHP diesel engines used to power the two (2) exempt 750 kilowatt (kW) emergency generators (G-1 and G-2) are affected units under 40 CFR 63, Maximum Achievable Control Technology (MACT), Subpart ZZZZ, and therefore are subject to the owner/operator requirements of the MACT. In summary, each engine is required to comply with certain federal emission standards and operating limitations over its useful life. The Department of Environmental Quality (DEQ) advises you and your staff to review the MACT to ensure compliance with applicable emission and operational limitations. As the owner/operator you are also responsible for monitoring, notification, reporting, performance testing, and recordkeeping requirements of the MACT. Notifications and other required submissions shall be sent to the U.S. Environmental Protection Agency, Region III.

It has been determined that the 2,937 BHP diesel engines used to power the two (2) *permitted* emergency generators G-3, and G-4 are affected units under 40 CFR 60, New Source Performance Standards (NSPS), Subpart IIII and 40 CFR 63, Maximum Achievable Control Technology (MACT), Subpart ZZZZ, and therefore are subject to the owner/operator requirements of both the NSPS and the MACT. In summary, each engine is required to comply with certain federal emission standards and operating limitations over its useful life. The Department of Environmental Quality (DEQ) advises you and your staff to review both the NSPS and MACT to ensure compliance with applicable emission and operational limitations. As the owner/operator you are also responsible for monitoring, notification, reporting, performance testing, and recordkeeping requirements of the NSPS and the MACT. Notifications and other required submissions shall be sent to the U.S. Environmental Protection Agency, Region III.

If you have any questions concerning this permit, please contact the DEQ Tidewater Regional Office at (757) 518-2006

Sincerely,



Troy D. Breathwaite
Regional Air Permits Manager

TDB/JIM//60353_005_15_NSRart6minamd_SentaraHealthcare.docx

Attachment: Permit
NSPS Subpart IIII
MACT ZZZZ

Link for NSPS and MACT Regulations: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=27d0dad4dd3d4c1969aad205b798e315&c=ecfr&tpl=/ecfrbrowse/Title40/40tab_02.tpl

cc: Manager, Data Analysis (electronic file submission)
Manager/Inspector, Air Compliance



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STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit includes designated equipment subject to
New Source Performance Standards (NSPS) and
National Emission Standards for Hazardous Air Pollutants
for Source Categories (MACT).

This permit supersedes the NSR permit dated April 11, 2014.

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

Sentara Healthcare
800 Independence Boulevard
Virginia Beach, Virginia 23455
Registration Number: 60353

is authorized to construct and operate

a healthcare office (data center operations) facility

located at

800 Independence Boulevard
Virginia Beach, VA 23455

in accordance with the Conditions of this permit.

Approved on: August 7, 2015


Maria R. Nold
Regional Director

August 7, 2015
Signature Date

Permit consists of 7 pages.
Permit Conditions 1 to 18.

INTRODUCTION

This permit approval is based on the permit applications dated January 22, 2014 and May 22, 2015 and supplemental information dated April 10, 2014. 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 5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. 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 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

Equipment List - Equipment at this facility consists of the following:

Equipment permitted prior to the date of this permit				
Reference No.	Equipment Description	Rated Capacity	Federal Requirements	Original Permit Date
G-3	One (1) - Caterpillar Model 3516C 2 MW diesel-powered emergency generator	2,000 kWe 2,937 BHP engine	40 CFR 60, Subpart IIII (NSPS) 40 CFR 63, Subpart ZZZZ (MACT)	April 11, 2014
G-4	One (1) - Caterpillar Model 3516C 2 MW diesel-powered emergency generator	2,000 kWe 2,937 BHP engine	40 CFR 60, Subpart IIII (NSPS) 40 CFR 63, Subpart ZZZZ (MACT)	April 11, 2014

Equipment Exempt from Permitting			
Reference No.	Equipment Description	Rated Capacity	Exemption Citation
G-1	One (1) - Caterpillar Model 3412 diesel-powered emergency generator; MACT, Subpart ZZZZ applicability, installed in 1995	750 kWe 1,180 BHP engine	9 VAC 5-80-1105 B.2.b
G-2	One (1) - Caterpillar Model 3412 diesel-powered emergency generator; MACT, Subpart ZZZZ applicability, exempted on 5-31-06	750 kWe 1,180 BHP engine	9 VAC 5-80-1105 B.2.b
B-1, B-2, B-3	Three (3) - Hydrotherm Model KN16 natural gas-fired boilers	1.6 MMBtu/hr (each)	9 VAC 5-80-1105 B.1.a.(4)
---	One (1) - Natural gas-fired Lochinvar Model PFN2000PM water heater; exempted on 5-24-06	2.0 MMBtu/hr	9 VAC 5-80-1105 B.1.a.(3)

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.

(9 VAC 5-80-1180 D 3)

1. **Emission Controls** - Visible emissions and nitrogen oxide (NO_x) emissions from the generator engines (Ref. Nos. G-3 and G-4) shall be controlled by the use of the engine manufacturer's recommended operating practices and performing appropriate engine manufacturer recommended maintenance. In addition, the permittee may only change those settings that are permitted by the engine manufacturer and does not increase air emissions.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
2. **Monitoring Devices** - Each emergency generator shall be equipped with a non-resettable hour meter device to monitor engine operating hours. The non-resettable hour meter used to continuously measure the hours of operation for each generator engine shall be observed by the owner/operator at a frequency of not less than once each day when the emergency generator is operated. The owner shall keep a log of these observations. Each non-resettable hour meter device shall be installed, maintained, calibrated (as appropriate), and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each non-resettable hour meter device shall be provided with adequate access for inspection and shall be in operation whenever the emergency generator's engine is operating.
(9 VAC 5-80-1180 D)

OPERATING LIMITATIONS

3. **Emergency Power Generation** - The emergency generators (Ref. Nos. G-3 and G-4) shall only be operated in the following modes:
 - a. In situations that arises from sudden and reasonably unforeseeable events where the primary energy or power source is disrupted or disconnected due to conditions beyond the control of an owner or operator of a facility including:
 - i. A failure of the electrical grid;
 - ii. On-site disaster or equipment failure; or
 - iii. Public service emergencies such as flood, fire, natural disaster, or severe weather conditions.
 - b. 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. The permittee shall submit notification to the Air Permits Manager of the DEQ Tidewater Regional Office within thirty (30) calendar days of signing a contract to participate in the ELRP. Where an ISO emergency is:
 - i. An abnormal system condition requiring manual or automatic action to maintain system frequency, to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property;
 - ii. Capacity deficiency or capacity excess conditions;
 - iii. A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel;
 - iv. Abnormal natural events or man-made threats that would require conservative operations to posture the system in a more reliable state; or
 - v. An abnormal event external to the ISO service territory that may require ISO action.
 - c. For periodic maintenance, testing, and operational training.

When changing from Emergency Power Generation to Non-Emergency (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 emergency generator to ensure that the facility remains in compliance with the appropriate permitting requirements. Total emissions for any 12 month period, calculated as the sum of all emissions from operations under the scenarios above, shall not exceed the limits stated in Condition 7.
(9 VAC 5-80-1180)

4. **Emergency Generator Operating Hours** - The emergency generators (Ref. Nos. G-3 and G-4) shall not operate more than 500 hours per year each, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)
5. **Fuel** - The approved fuel for use in the emergency generator engines (Ref. Nos. G-3 and G-4) is diesel fuel oil. The diesel fuel oil shall meet the ASTM D975 specifications for S15 diesel fuel oil having a maximum sulfur content per shipment of 0.0015% (by weight). A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-1180)
6. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel oil. Each fuel supplier certification shall include the following:
 - a. The name of the fuel supplier;
 - b. The date on which the diesel fuel was received;
 - c. The volume of diesel fuel delivered in the shipment;
 - d. A statement that the diesel fuel complies with the American Society for Testing and materials specifications (ASTM D975) for S15 diesel fuel; and
 - e. The sulfur content for the diesel fuel.

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ, may be used to determine compliance with the fuel specifications stipulated in Condition 7 of this permit. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-170-160 and 9 VAC 5-50-410)

EMISSION LIMITS

7. **Emergency Generator Engine Emission Limits** - Emissions from the operation of the emergency generator units (Ref. Nos. G-3 and G-4) shall not exceed the limits specified below:

	<u>Each Engine</u>	<u>Combined</u>
Particulate Matter (PM)	4.1 lbs/hr	1.0 tons/yr
PM-10	4.1 lbs/hr	1.0 tons/yr
PM-2.5	4.1 lbs/hr	1.0 tons/yr
Nitrogen Oxides (as NO ₂)	141.0 lbs/hr	35.2 tons/yr

Carbon Monoxide	32.3 lbs/hr	8.1 tons/yr
Volatile Organic Compounds	4.4 lbs/hr	1.1 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 1 - 6, 8, and 10. (9 VAC 5-80-1180)

8. **Visible Emission Limit** - Visible emissions from the engine exhaust of each emergency generator (Ref. Nos. G-3 and G-4) shall not exceed ten percent (10%) opacity during one 6-minute period in any one hour in which visible emissions shall not exceed 20 percent (20%) opacity as determined by the EPA Method 9 (Reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-80-1180 and 9 VAC 5-40-260)
9. **Emissions Testing** - The permitted emergency generator engines (Ref. Nos. G-3 and G-4) shall be installed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at appropriate locations and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

RECORDS

10. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ Tidewater Regional Office (Air Compliance). These records shall include, but are not limited to:
- a. Annual hours of operation for each emergency generator engine (Ref. Nos. G-3 and G-4), calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months;
 - b. All fuel supplier certifications;
 - c. Engine information including make, model, serial number, model year, maximum engine power (bhp), and the engine displacement for each emergency generator engine;
 - d. The manufacturer's written operating instructions or procedure developed by the owner/operator that are approved by the engine manufacturer for each emergency generator engine;
 - e. Records of the reasons for operation for each emergency generator engine, including, but not limited to, the date, cause of operation, cause of emergency, and the hours of operation;
 - f. Results of stack tests and visible emission evaluations; and
 - g. Scheduled and unscheduled maintenance and operator training.

These records shall be available for inspection by DEQ and shall be current for the most recent five (5) years.

(9 VAC 5-80-1180, 9 VAC 5-50-50, and 9 VAC 5-50-410)

GENERAL CONDITIONS

11. Permit Suspension/Revocation - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit;
- 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
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

12. 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)

13. Maintenance/Operating Procedures - At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions:

(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

14. Record of Malfunctions - The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one (1) hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.

(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

15. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the DEQ Tidewater Regional Office (Air Compliance) of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one (1) hour, by facsimile transmission, telephone or electronic mail (e-mail). Such notification shall be made as soon as practicable but no later than four (4) daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two (2) weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ Tidewater Regional Office (Air Compliance).
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)
16. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)
17. **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 Air Permits Manager at the Tidewater Regional Office of the change of ownership within 30 calendar days of the transfer.
(9 VAC 5-80-1240)
18. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)