

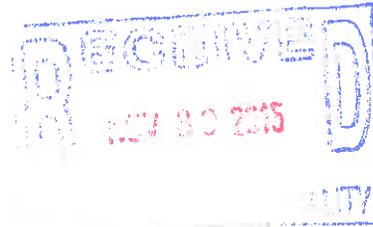


November 25, 2015

BY: U.S. CERTIFIED MAIL, RETURN RECEIPT REQUESTED

7014 3490 0000 0448 4723

William F. Durham
Director, Division of Air Quality
WVDEP
601 57th Street
Charleston, WV 25304



RE: **Dominion Transmission, Inc.**
Parkersburg City Plant
Permit Determination Request

Dear Mr. Durham:

Dominion Transmission, Inc. (Dominion) is submitting this request for permit determination for the addition of a natural gas auxiliary generator at our Parkersburg City Plant, an existing office/ warehousing building to support delivery operations located near Parkersburg, Wood County, West Virginia.

Based on the response from DEP dated December 16, 2013 (enclosed) for a similar unit, Dominion believes a permit is not necessary for the installation and operation of a Cummins KTA19G auxiliary generator at the Parkersburg City Plant. Information on the unit is included below:

Engine Manufacturer and Model: Cummins KTA19G, manufactured 2015
Manufacturer's Rated bhp: 530 bhp
Subject to NSPS Subpart JJJJ? Yes, certified
Subject to NESHAP Subpart ZZZZ? Yes, new source, area source
Fuel Type: Pipeline Quality Natural Gas

Potential Emissions (Based on 8,760 hours)

Pollutant	Source	lbs/hr	tons/yr
NO _x	AP-42	1.75	7.68
CO	AP-42	1.87	8.19
VOC	AP-42	0.56	2.43
SO ₂	AP-42	2.77E-03	1.21E-02
PM (filterable)	AP-42	3.63E-04	1.59E-03
PM10 (filterable)	AP-42	3.63E-04	1.59E-03
PM2.5 (filterable)	AP-42	3.63E-04	1.59E-03
PM (condensibles)	AP-42	4.66E-02	0.20
Formaldehyde	AP-42	0.25	1.09
Total HAP	AP-42	0.33	1.46

The auxiliary generator is not deemed to be a stationary source since there are no substantive requirements and the potential emission are below permitting thresholds. 40 CFR 60 Subpart JJJJ applies to the generator which requires Dominion to purchase an engine certified to emission standards in 40 CFR 1048.101(c); therefore, no performance tests are required. The engine is EPA certified and by meeting Subpart JJJJ requirements, the engine also meets 40 CFR Part 63, Subpart ZZZZ requirements. Dominion will meet the requirements of Subpart JJJJ by complying with the following requirements:

- Maintaining records of maintenance conducted in accordance with the manufacturer's instructions or per the facility maintenance plan;
- Maintaining records of the hours of operation including number of hours of emergency usage with reason and number of hours of non-emergency usage; and
- Maintaining a copy of the engine certification.

If you require any additional information, please contact Rebekah Remick at 804-273-3536 or via email at Rebekah.J.Remick@dom.com.

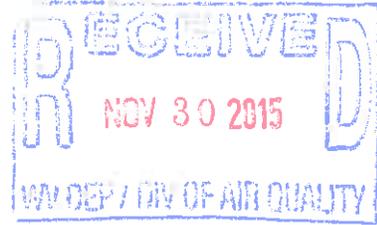
Sincerely,



Amanda B. Tornabene
Director, Gas Environmental Services

Enclosures

- Appendix A: Permit Determination for Parkersburg City Plant
- Appendix B: Previous Review for Similar Unit



Appendix A
Permit Determination for Parkersburg City Plant



WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

**PERMIT DETERMINATION FORM
(PDF)**

FOR AGENCY USE ONLY: PLANT I.D. # _____
PDF # _____ PERMIT WRITER: _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE): Dominion Transmissions, Inc.		
2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE): Parkersburg City Plant		3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CODE: 551114
4A. MAILING ADDRESS: 925 White Oaks Blvd., Bridgeport, WV 26330		4B. PHYSICAL ADDRESS: 55 Ashby Ridge Road, Parkersburg, WV 26104
5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A): From (Route 50/East/West) / (Interstate 77 North Parkersburg WV) proceed North on Interstate 77 to the Emerson Ave. exit. Exit North on to WV State Route 2. Turn immediately right on Ashby Road, then an immediate right into the facility.		
5B. NEAREST ROAD: Ashby Ridge Road	5C. NEAREST CITY OR TOWN: Parkersburg, WV	5D. COUNTY: Wood
5E. UTM NORTHING (KM): 4351569.5	5F. UTM EASTING (KM): 459081.5	5G. UTM ZONE: 17
6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED: Rebekah Remick		6B. TITLE: Environmental Consultant
6C. TELEPHONE: 804-273-3536	6D. FAX: 804-273-2964	6E. E-MAIL: Rebekah.J.Remick@dom.com
7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY): _____		7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY): N/A
7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST: No		
8A. TYPE OF EMISSION SOURCE (CHECK ONE): <input checked="" type="checkbox"/> NEW SOURCE <input type="checkbox"/> ADMINISTRATIVE UPDATE <input type="checkbox"/> MODIFICATION <input type="checkbox"/> OTHER (PLEASE EXPLAIN IN 11B)		8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN? <input type="checkbox"/> YES <input type="checkbox"/> NO
9. IS <i>DEMOLITION</i> OR <i>PHYSICAL RENOVATION</i> AT AN EXISTING FACILITY INVOLVED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE: <u>12/9/2015</u>		10B. DATE OF ANTICIPATED START-UP: <u>12/9/2015</u>
11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B .		
11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C .		
12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D . FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.		

13A. REGULATED AIR POLLUTANT EMISSIONS:

⇒ **FOR A NEW FACILITY**, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY**, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM	0.05	0.21
PM ₁₀	3.63E-04	1.59E-03
VOCs	0.56	2.43
CO	1.87	8.19
NO _x	1.75	7.68
SO ₂	2.77E-03	1.21E-02
Pb		
HAPs (AGGREGATE AMOUNT)	0.33	1.46
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. CERTIFICATION OF DATA

I, **JEFF MURPHY** (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A **RESPONSIBLE OFFICIAL**** (PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: 

TITLE: VP AND GENERAL MANAGER DOMINION EAST OHIO DATE: 11 1 18 2015

** THE DEFINITION OF THE PHRASE 'RESPONSIBLE OFFICIAL' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

ATTACHMENT A ATTACHMENT B ATTACHMENT C ATTACHMENT D ATTACHMENT E

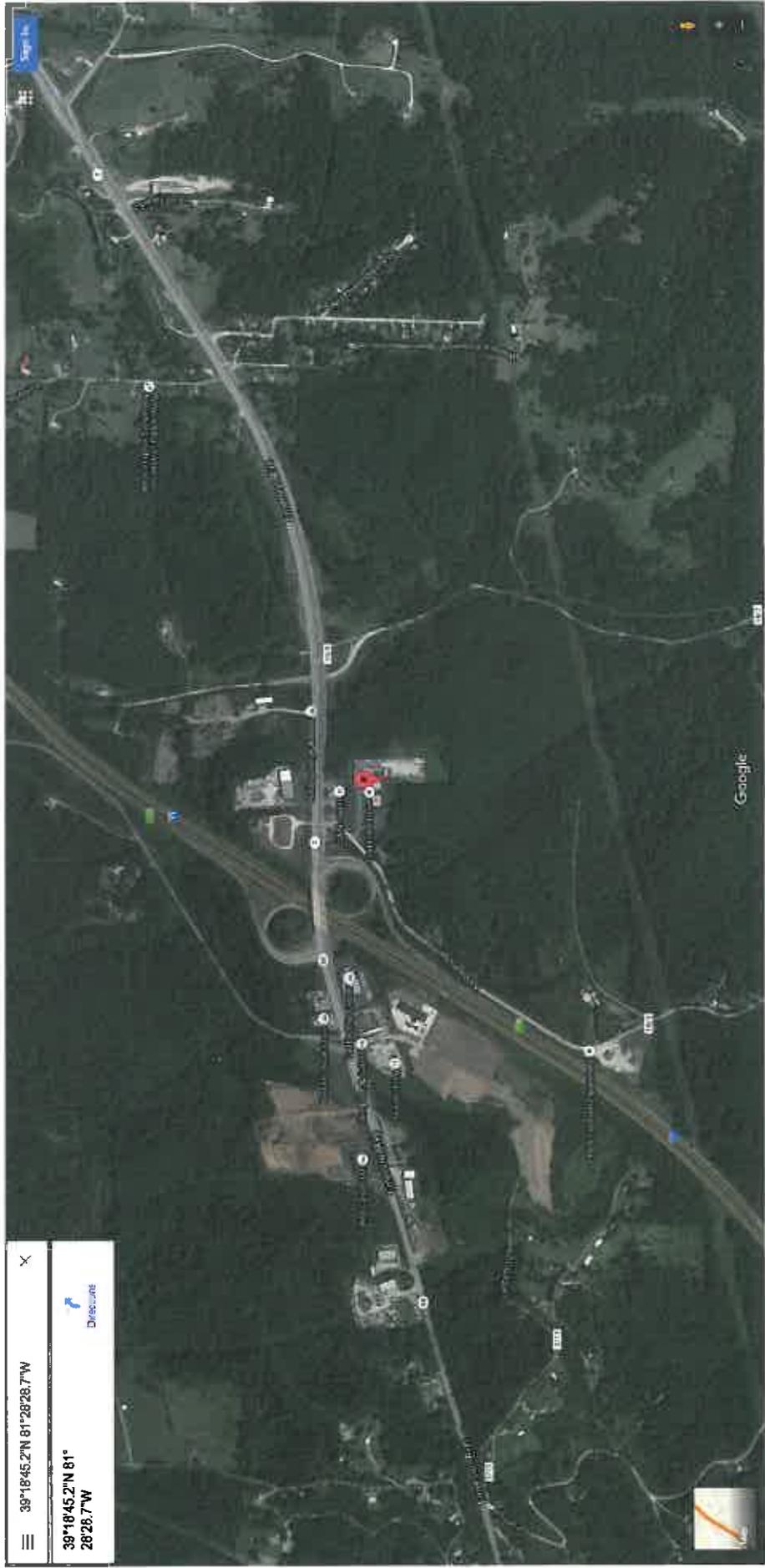
RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE:

www.dep.wv.gov/daq

Attachment A

Facility Location



☰ 39°18'45.2"N 81°28'28.7"W

✕

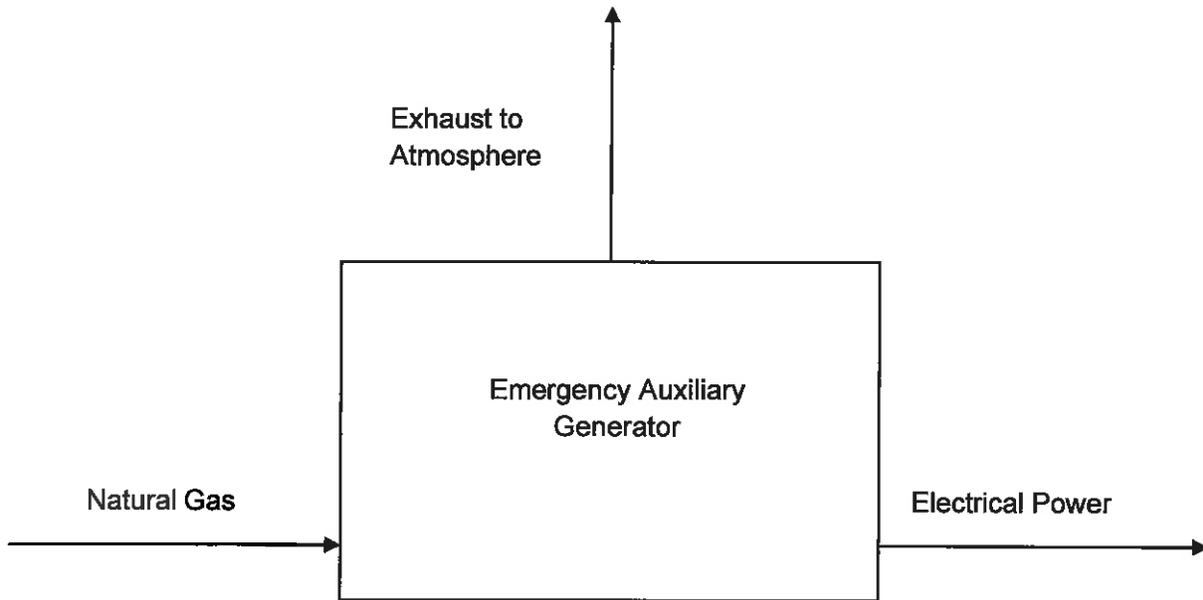
39°18'45.2"N 81°28'28.7"W

 Directions

Attachment B
Process Flow Diagram

Process Flow Diagram for the Emergency Auxiliary Generator

Parkersburg City Plant



Attachment C

Process Description

Process Description

Parkersburg City Plant is an existing office/warehouse storage area for Dominion Hope employees to support delivery operations located near Parkersburg, Wood County, West Virginia. This permit determination is for a new natural gas emergency generator to supply power to the facility in the event of a power loss.

Attachment E

Supporting Calculations

Emergency Engine Potential Emissions

Dominion Transmission, Inc.

Parkersburg City Plant

Input Data: Cummins KTA19G
 Design Class: 4-stroke lean burn
 Engine Power: 530 hp (Manufacturer Specs)
 Fuel Input: 4.71 MMBtu/hr
 Maximum Hours of Operation: 8,760 hrs/yr
 500 hrs/yr
 Fuel Throughput: 4,615 cf/hr (Manufacturer Specs - worst case)
 2,307,500 cf/yr
 Heating Value of Natural Gas: 1,020 Btu/cf

Emission Calculations

Pollutant	Emission Factor		Emissions (8760 hrs/yr)			Emissions (500 hrs/yr)		
			(lb/hr)	(lbs/day)	(tons/yr)	(lb/hr)	(lbs/day)	(tons/yr)
Criteria Pollutants								
PM (filterable)	7.71E-05	lb/MMBtu	3.63E-04	8.71E-03	1.59E-03	3.63E-04	8.71E-03	9.07E-05
PM-10 (filterable)	7.71E-05	lb/MMBtu	3.63E-04	8.71E-03	1.59E-03	3.63E-04	8.71E-03	9.07E-05
PM-2.5 (filterable)	7.71E-05	lb/MMBtu	3.63E-04	8.71E-03	1.59E-03	3.63E-04	8.71E-03	9.07E-05
PM (condensibles)	9.91E-03	lb/MMBtu	4.66E-02	1.12	0.20	4.66E-02	1.12	1.17E-02
SO2	5.88E-04	lb/MMBtu	2.77E-03	0.07	1.21E-02	2.77E-03	0.07	6.92E-04
CO	1.60	g/hp-hr	1.87	44.87	8.19	1.87	44.87	0.47
NOx	1.50	g/hp-hr	1.75	42.06	7.68	1.75	42.06	0.44
VOC	0.12	lb/MMBtu	0.56	13.33	2.43	0.56	13.33	0.14
Greenhouse Gases								
CO2	117.0	lb/MMBtu	550.65	--	2411.84	550.65	--	137.66
CH4	2.20E-03	lb/MMBtu	0.01	--	0.05	0.01	--	0.00
N2O	2.20E-04	lb/MMBtu	0.00	--	0.00	0.00	--	0.00
CO2e	117.1	lb/MMBtu	551.22	--	2414.33	551.22	--	137.80
Hazardous Air Pollutants								
1,1,2,2-Tetrachloroethane	4.00E-05	lb/MMBtu	1.88E-04	--	8.25E-04	1.88E-04	--	4.71E-05
1,1,2-Trichloroethane	3.18E-05	lb/MMBtu	1.50E-04	--	6.56E-04	1.50E-04	--	3.74E-05
1,1-Dichloroethane	2.36E-05	lb/MMBtu	1.11E-04	--	4.87E-04	1.11E-04	--	2.78E-05
1,2-Dichloroethane	2.36E-05	lb/MMBtu	1.11E-04	--	4.87E-04	1.11E-04	--	2.78E-05
1,2-Dichloropropane	2.69E-05	lb/MMBtu	1.27E-04	--	5.55E-04	1.27E-04	--	3.17E-05
1,3-Butadiene	2.67E-04	lb/MMBtu	1.26E-03	--	5.50E-03	1.26E-03	--	3.14E-04
1,3-Dichloropropene	2.64E-05	lb/MMBtu	1.24E-04	--	5.44E-04	1.24E-04	--	3.11E-05
Acrolein	5.14E-03	lb/MMBtu	2.42E-02	--	1.06E-01	2.42E-02	--	6.05E-03
Acetaldehyde	8.36E-03	lb/MMBtu	3.94E-02	--	1.72E-01	3.94E-02	--	9.84E-03
Benzene	4.40E-04	lb/MMBtu	2.07E-03	--	9.07E-03	2.07E-03	--	5.18E-04
Butr/isobutyraldehyde	1.01E-04	lb/MMBtu	4.75E-04	--	2.08E-03	4.75E-04	--	1.19E-04
Carbon Tetrachloride	3.67E-05	lb/MMBtu	1.73E-04	--	7.57E-04	1.73E-04	--	4.32E-05
Chlorobenzene	3.04E-05	lb/MMBtu	1.43E-04	--	6.27E-04	1.43E-04	--	3.58E-05
Chloroform	2.58E-05	lb/MMBtu	1.21E-04	--	5.32E-04	1.21E-04	--	3.04E-05
Ethylbenzene	3.97E-05	lb/MMBtu	1.87E-04	--	8.19E-04	1.87E-04	--	4.67E-05
Ethylene Dibromide	4.43E-05	lb/MMBtu	2.09E-04	--	9.13E-04	2.09E-04	--	5.21E-05
Formaldehyde	5.28E-02	lb/MMBtu	2.49E-01	--	1.09E+00	2.49E-01	--	6.21E-02
Methanol	2.50E-03	lb/MMBtu	1.18E-02	--	5.15E-02	1.18E-02	--	2.94E-03
Methylene Chloride	2.00E-05	lb/MMBtu	9.41E-05	--	4.12E-04	9.41E-05	--	2.35E-05
Naphthalene (POM)	7.44E-05	lb/MMBtu	3.50E-04	--	1.53E-03	3.50E-04	--	8.76E-05
PAH	2.69E-05	lb/MMBtu	1.27E-04	--	5.55E-04	1.27E-04	--	3.17E-05
Styrene	2.36E-05	lb/MMBtu	1.11E-04	--	4.87E-04	1.11E-04	--	2.78E-05
Toluene	4.08E-04	lb/MMBtu	1.92E-03	--	8.41E-03	1.92E-03	--	4.80E-04
Vinyl Chloride	1.49E-05	lb/MMBtu	7.01E-05	--	3.07E-04	7.01E-05	--	1.75E-05
Xylene	1.84E-04	lb/MMBtu	8.66E-04	--	3.79E-03	8.66E-04	--	2.17E-04
TOTAL HAP:			0.33		1.46	0.33		0.08

(1) Lb/MMBtu emission factors from AP-42, Section 3.2, Natural Gas-Fired Reciprocating Engines, Table 3.2-2, 7/00

(2) G/hp-hr emission factors from manufacturer specification sheet.

(3) Lb/MMBtu numbers based on 40 CFR Part 98 Tables C-1 and C-2 for natural gas

For example: $CO_2 = (53.06 \text{ kg } CO_2/MMBtu) / (0.453592 \text{ kg/lb}) = 117.0 \text{ lb/MMBtu}$

(4) Global Warming Potentials = 25 for CH4 and 298 for N2O (per 40 CFR Part 98 Table A-1 to Subpart A)

For example: $CO_2e = (117.0 \text{ lb/MMBtu}) + (0.0022 \text{ lb/MMBtu} * 25) + (0.0022 \text{ lb/MMBtu} * 298) = 117.1 \text{ lb/MMBtu}$

Gaseous Fuel Generator Set KTA19G Engine Series



Specification Sheet
Model GFEB EPA SI NSPS Certified



KW(KVA) @ 0.8 P.F.	
Compression	60 Hz-1800 RPM
Ratio	Standby
8.5:1 (Note 1)	350 kW (437 kVa)

Note:

(1) 54°C (130°F) or lower water temperature into the aftercooler.

NOTE: This engine is EPA certified and must be operated as outlined in the supplied O&M manual.

Fuel Application Guide	
Compression Ratio	8.5:1
Dry Processed Natural Gas	Yes
Propane (HD-5)	N/A
All gases such as field gas, digester and sewage gas will require an analysis of the specified gas and pre-approval from CNGE. Consult your Cummins Distributor for details.	

Description

The Cummins NPower GF-series commercial generator set is a fully integrated power generation system providing optimum performance, reliability, and versatility for stationary standby power applications.

A primary feature of the GF GenSet is strong motor-starting capability and fast recovery from transient load changes. The torque-matched system includes a heavy-duty Cummins 4-cycle spark ignited engine, an AC alternator with high motor-starting kVA capacity, and an electronic voltage regulator with three phase sensing for precise regulation under steady-state or transient loads. The GF GenSet accepts 100% of the nameplate standby rating in one step. * Sets comply with 10 second ready to load per NFPA 110.

The standard PowerCommand® digital electronic control is an integrated system that combines engine and alternator controls for high reliability and optimum GenSet performance.

Optional weather-protective housing and component heaters shield the generator set from extreme operating conditions.** Environmental concerns are addressed by low exhaust emission engines, sound-attenuated housings, and exhaust silencers. A wide range of options, accessories, and services are available, allowing configuration to your specific power generation needs.

Every production unit is factory tested at rated load and power factor. This testing includes demonstration of rated power and single-step rated load pickup. Cummins NPower manufacturing facilities include quality standards, emphasizing our commitment to high quality in the design, manufacture, and support of our products. The PowerCommand control is UL508 Listed.

All Cummins NPower generator sets are backed by a comprehensive warranty program and supported by a worldwide network of 233 locations to assist with warranty, service, parts, and planned maintenance support.

Features

Cummins Heavy-Duty Engine - Rugged 4-cycle industrial spark ignited engine delivers reliable power, low emissions, and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor-starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads, fault-clearing short-circuit capability, and class H insulation. The alternator electrical insulation system is UL1446 Recognized.

Control Systems - The PowerCommand electronic control is standard equipment and provides total genset system integration, including automatic remote starting/stopping, precise voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, and auto-shutdown at fault detection. PowerCommand control is Listed to UL508.

Cooling System - Standard cooling package provides reliable running at the rated power level, at up to 100°F ambient temperature.

Housings - Optional weather-protective housing and sound attenuation housing(s) are available.

Standards - Generators are designed, manufactured and tested to relevant UL, NFPA, ISO and IEC standards. The alternator is certified to CSA 22.2. The controls are CSA C282-M1999 and 22.2 No.14 M91. PowerCommand control is UL508 Listed.

Warranty and Service - Backed by a comprehensive warranty and worldwide distributor service network.

* Adequate fuel pressure and volume must be provided.

** Cold weather heaters are recommended when ambient temperatures are below 32°F.

Generator Set

The general specifications provide representative configuration details. Consult the outline drawing for installation design.

Specifications - General	
Unit Width	1778 mm (70 in) Open set
Unit Height	2159 mm (85 in) Open set
Unit Length	3734 mm (147in) Open set
Unit Dry Weight	4,010 to 4731 kg (8840 to 10429 lbs) - Dependant on selected alternator.
Rated Speed	1800 rpm
Voltage Regulation, No Load to Full Load	±1.0%
Random Voltage Variation	±1.0%
Frequency Regulation	Isochronous
Random Frequency Variation	±0.5%
Radio Frequency Interference	Optional PMG excitation operates in compliance with BS800 and VDE level G and N. Addition of RFI protection kit allows operation per MIL-STD-461 and VDE level K.
See outline drawing for installation design specifications	

Rating Definitions

Standby Rating based on: Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to Fuel Stop Power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated. Usage based on ISO 8528.

Site Derating Factors

See engine data sheet FR 4538 for altitude and ambient derate curves.

Gensets with Weather or Sound Enclosures may reduce ambient capability by 2 to 4.5 °C (4 to 8 °F) depending on enclosure type and site conditions.

1) Data represents gross engine performance capabilities obtained and corrected in accordance with SAEJ1349 conditions of 29.81 in. Hg.(100KPa) barometric pressure [361 ft. (110m) altitude], 77°F (25°C) inlet air temperature, and 0.30 in Hg.(100KPa) water vapor pressure using dry processed natural gas fuel with 905 BTU per standard cubic foot (33.72 kJ/L) lower heating value. Deration may be required due to altitude, temperature or type of fuel. Consult your local Cummins Distributor for details.

2) FUEL SYSTEM

Standard Carburetor – IMPCO Make
 Low Pressure Dry Processed Natural Gas – (905 BTU/ft.³ L.H.V.)
 Running Pressure to Engine381 to 508 mm H₂O(15 to 20 in. H₂O)
 Minimum Gas Supply Pipe Size @ Engine50.8 mm (2.0 in.)
 Gas Supply Filter Pressure Rating690 kPa (100psi)

The preceding pipe sizes are only suggestions and piping may vary with temperatures, distance from fuel supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the regulator.

The Genset (engine) performance is based on processed natural gas fuel with 905 BTU per standard cubic foot (33.72 kJ/L) lower heating value. Variations in fuel composition and/or supply pressure must be eliminated during steady state operation. Locate the gas regulator as near to the engine as possible. Some systems may need an accumulator or other device(s) for startup or unstable conditions, contact the Fuel Supply utility for details.

Engine

Cummins heavy-duty spark ignited engines use advanced combustion technology for reliable and stable power, low emissions, and fast response to sudden load changes.

Electronic governing is standard for applications requiring constant (isochronous) frequency regulation such as Uninterruptible Power Supply (UPS) systems, non-linear loads, or sensitive electronic loads. Optional coolant heaters are recommended for all emergency standby installations or for any application requiring fast load acceptance after start-up.

Specifications - Engine				
Base Engine		Cummins Model KTA19G		
Displacement		19 L (1150 in ³)		
Overspeed Limit		2100 rpm		
Regenerative Power		361 kW		
Cylinder Block Configuration		Cast iron with replaceable wet cylinder liners		
Cranking Current		900 amps at ambient temperature of 0°C (32°F)		
Battery Charging Alternator		37 amps		
Battery Type		8D		
Starting Voltage		24-volt, negative ground		
Standard Cooling System		38°C (100°F) ambient radiator		
Lube Oil Filter Types		Dual spin-on canisters-combination full flow with bypass		
Fuel		STANDBY		
Fuel Consumption (Approximate)	Load kW	1/2	3/4	Full
Natural Gas	CFH	2560	3587	4615
Propane Vapor *	CFH	N/A	N/A	N/A
Propane Liquid *	GPH	N/A	N/A	N/A
Cooling		Full Load		
Jacket Water Heat Rejection to Coolant		294 kW (16753 BTU/min)		
Aftercooler Heat Rejection to Coolant		110 kW (6277 BTU/min)		
Heat Rejection to Room		49 kW (2785 BTU/min)		
Jacket Water Coolant Capacity (w/radiator)		76 L (20 USG)		
Jacket Water Coolant Flow Rate		526 L/min (139 GPM)		
Aftercooler Coolant Capacity (w/radiator)		49 L (13 USG)		
Aftercooler Coolant Flow Rate		102 L/min (27 GPM)		
Maximum Coolant Friction Head **		34 kPa (5 psi)		
Maximum Coolant Static Head **		18.3 m (60 ft)		
Radiator Fan Load		26 kW (34 hp)		
Air		Full Load		
Combustion Air		575 L/sec (1219 cfm)		
Maximum Air Cleaner Restriction		381 mm H ₂ O (15 in H ₂ O)		
Alternator Cooling Air		0.99 m ³ /s (2100 cfm)		
Radiator Cooling Air		16576 L/sec (35123 cfm)		
Maximum Restriction at Radiator Discharge (static)		12.7 mm H ₂ O (0.5 in H ₂ O)		
Exhaust		Full Load		
Gas Flow (Full Load)		1472 L/sec (3120 cfm)		
Gas Temperature		697° C (1286° F)		
Maximum Back Pressure		51 mm Hg (2 in Hg)		
Engine		Full Load		
Gross Engine Power Output		395 kWm (530 hp)		
BMEP		1395 kPa (202 psi)		
Piston Speed		9.53 m/s (1875 ft/min)		
Oil Capacity		61 L (16 gal)		

* Emergency use only. Not for primary fuel use.

** Jacket water only.

Alternator

Several alternators are available for application flexibility based on the required motor-starting kVA and other requirements. Larger alternator sizes have lower temperature rise for longer life of the alternator insulation system. In addition, larger alternator sizes can provide a cost-effective use of engine power in across-the-line motor-starting applications and can be used to minimize voltage waveform distortion caused by non-linear loads.

Single-bearing alternators couple directly to the engine flywheel with flexible discs for drive train reliability and durability. No gear reducers or speed changers are used. Two-thirds pitch windings eliminate third-order harmonic content of the AC voltage waveform and provide the standardization desired for paralleling of generator sets. The standard excitation system is a self (shunt) excited system with the voltage regulator powered directly from the

Alternator Application Notes

Separately Excited Permanent Magnet Generator (PMG) System - This option uses an integral PMG to supply power to the voltage regulator. A PMG system generally has better motor-starting performance, lower voltage dip upon load application, and better immunity from problems with harmonics in the main alternator output induced by non-linear loads. This option is recommended for use in applications that have large transient loads, sensitive electronic loads (especially UPS applications), harmonic content, or that require sustained short-circuit current (sustained 3-phase short circuit current at approximately 3 times rated for 10 seconds).

Alternator Sizes - On any given model, various alternator sizes are available to meet individual application needs. Alternator sizes are differentiated by maximum winding temperature rise, at the generator set standby rating, when operated in a 40°C (104°F) ambient environment. Available temperature rises range from 80°C to 150°C (176°F to 302°F). Not all temperature rise selections are available on all models. Lower temperature rise is accomplished using larger alternators at lower current density. Lower temperature rise alternators have higher motor-starting kVA, lower voltage dip upon load application, and they are generally recommended to limit voltage distortion and heating due to harmonics induced by non-linear loads.

Alternator Space Heater - is recommended to inhibit condensation.

Available Output Voltages

Three Phase Reconnectable		Single Phase Non-Reconnectable		Three Phase Non-Reconnectable	
<input type="checkbox"/>	120/208	<input type="checkbox"/>	240/416	<input type="checkbox"/>	220/380
<input type="checkbox"/>	127/220	<input type="checkbox"/>	254/440	<input type="checkbox"/>	347/600
<input type="checkbox"/>	139/240	<input type="checkbox"/>	277/480		
<input type="checkbox"/>	120/240				

Specifications - Alternator

Design	Brushless, 4-pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct-coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.65 or better
Standard Temperature Rise *	125 °C *
Exciter Type	PMG
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct-drive centrifugal blower
AC Waveform Total Harmonic Distortion	<5% total no load to full linear load <3% for any single harmonic
Telephone Influence Factor (TIF)	<50 per NEMA MG1-22.43.
Telephone Harmonic Factor (THF)	<3

	80 ° C Alternator			105 ° C Alternator			125 ° C Alternator		
Voltage Ranges	120/208 Thru 139/240 240/416 Thru 277/480	277/480	347/600	120/208 Thru 139/240 240/416 Thru 277/480	277/480	347/600	120/208 Thru 139/240 240/416 Thru 277/480	277/480	347/600
Motor Starting	Broad Range	480	600	Broad Range	480	600	Broad Range	480	600
Maximum KVA (90% Sustained Voltage)	1896	1749	1749	1749	1372	1372	1372	1210	1210
Alternator Datasheet No	306E	305E	305E	305E	ADS342A	ADS342A	ADS342A	ADS341A	ADS341A
Full Load Current	120/240, 1 Ph	120/208V	127/220	139/240	220/380	240/416	254/440	277/480	347/600
(Amps @ Standby Rating)	1458	1214	1148	1052	665	607	574	526	421

* Other Temp Rises Available. See options at end of datasheet for more details.

Control System



PowerCommand Control 2.2

The PowerCommand Control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and Isochronous governing (optional). The integration of all control functions into a single control system provides enhanced reliability and performance, compared to conventional generator set control systems. Prototype tested; UL, CSA, and CE

Features

- AmpSentry™ protection providing a full range of alternator protection functions matched to the alternator provided.
- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet RS485 interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- InPower™ PC-based service tool available for detailed

AC Protection

- Over current warning and shutdown.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Over excitation (loss of sensing) fault.

Digital Voltage Regulation

- 3-phase line-to-line sensing.
- Configurable torque matching.
- Integrated digital electronic voltage regulator.
- Fault current regulation under single or three phase fault conditions.

Engine Protection

- Overspeed shutdown.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning or shutdown.
- Low coolant temperature warning.
- High, low and weak battery voltage warning.
- Fail to start (overcrank) shutdown.
- Fail to crank shutdown.
- Redundant start disconnect.
- Cranking lockout.
- Sensor failure indication.
- Low fuel level warning or shutdown.

Operator / Display Panel

- Manual off switch.
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols).
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode and remote start.

Engine Data

- DC Voltage
- Lube oil pressure.
- Coolant temperature

Other Display Data

- Genset model data.
- Start attempts, starts, running hours.
- Fault history.
- RS485 Modbus® interface.
- Data logging and fault simulation (requires InPower service tool).
- Total kilowatt hours.

Control Functions

- Time delay start and cooldown.
- Cycle cranking.
- PCCNet interface.
- (4) Configurable inputs.
- (4) Configurable outputs.
- Remote emergency stop.
- Battle short mode.
- Load shed.
- Real time clock with exerciser.

PCC Options

- Auxiliary output relays (2).
- 120/240 V, 100 W anti-condensation heater.
- Remote annunciator with (3) configurable inputs and (4) configurable outputs.
- Remote operator panel.
- PMG alternator excitation.
- PowerCommand iWatch web server for remote monitoring and alarm notification (loose).
- Digital governing.
- AC output analog meters (bargraph).
Color-coded graphical display of:
 - Line-to-line AC voltage
 - 3-phase current
 - Frequency
 - kVa
- PowerCommand 3.3 control with Parallel Configuration.

PowerCommand Control Values		
	PCC	Genset Reference Values
Ambient Operating Temperature	From -40 to +70°C (-40 to 158°F) HMI: From -20 to +70°C (-4 to 158°F)	-
Operating Altitude	up to 5000 meters (13,000 ft.)	-
Alternator Data		
Voltage	AC: Single or Three Phase Line-to-line or Line-to-neutral Within +/-1.0% any loads between no load to full. Drift = no more than +/-1.5% for 40°C (104°F) temp change in 8 hours.	-
Digital Output Voltage Regulation		-
Current	3-Phase AC	-
Frequency	60 Hz	-
Battery Config	24 VDC	24 VDC
Engine Data		
Voltage	DC	DC
Lube Oil Pressure	Adjustable	Adjustable
Engine Idle Speed	Adjustable	Adjustable
Genset values are for reference only. For unit data see genset data tag.		

Generator Set Options

Engine

- 120/208/240/480 V, 4000 W coolant heaters
- 120/208/240 V, 300 W lube oil heater

Cooling System

- Heat exchanger cooling
- Remote radiator cooling

Fuel System

- Flexible fuel connector
- Fuel strainer

Alternator

- 80° C rise alternator
- 105° C rise alternator
- 125° C rise alternator
- 120/240 V, 100 W anti-condensation heater
- Single phase

Exhaust System

- GenSet mounted muffler (Enclosure Models Only)
- Heavy duty exhaust elbow
- Slip on exhaust connection

Generator Set

- AC entrance box
- Batteries
- Battery charger
- Export box packaging
- Main line circuit breaker
- PowerCommand Network Communication Module (NCM)
- Stage I enclosure w/silencer
- Stage II enclosure w/silencer
- Remote annunciator panel
- Spring isolators
- Weather protective enclosure with silencer
- 2 year standby warranty
- 5 year basic power warranty

Available Products and Services

A wide range of products and services is available to match your power generation system requirements. Cummins Power Generation products and services include:

- Diesel and Spark-Ignited Generator Sets
- Transfer Switches
- Bypass Switches
- Parallel Load Transfer Equipment
- Digital Paralleling Switchgear
- PowerCommand Network and Software
- Distributor Application Support
- Planned Maintenance Agreements

Warranty

All components and subsystems are covered by an express limited one-year warranty. Other optional and extended factory warranties and local distributor maintenance agreements are available. Contact your distributor/dealer for more information.

Certifications



CSA - The alternator is certified to CSA 22.2. The controls are CSA C282-M1999 and 22.2 No.14 M91.



PTS - The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Products bearing the PTS symbol have been subjected to demanding tests to verify the design integrity and performance under both normal and abnormal operating conditions including short circuit, endurance, temperature rise, torsional vibration, and transient response, including full load pickup.

See your distributor for more information



NPower

Cummins NPower LLC
875 Lawrence Drive
DePere, WI 54115
920.337.9750
Fax: 920.337.9746
www.cumminsnpower.com

Cummins and PowerCommand are registered trademarks of Cummins Inc.
AmpSentry is a trademark of Cummins Inc.
LonWorks is a registered trademark of Echelon

Important: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect generator sets to any building electrical system except through an approved device or after building main switch is open.



Engine Emissions Data
Cummins Inc
 Columbus, Indiana 47202-3005
<http://www.cummins.com>

Power Generation
KTA19G
FR 4538

530 hp (395 kWm) @ 1800 rpm
 1546 lb-ft (2096 N-m) @ 1800 rpm

Configuration D483008GX03	CPL Code 3497	Revision 25-Aug-14
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Compression Ratio: 8.5:1	Displacement: 1150 cu. in. (19 L)
Fuel System: Natural Gas	Cylinders: 6
Combustion: Simple Lean Burn	Bore x Stroke: 6.25 x 6.25 in (159 x 159 mm)
Emission Certification: 2g/hp-hr NOx US EPA NSPS Factory Certified	Aspiration: Turbocharged and Aftercooled

Engine Speed	Standby Power		75% Load		50% Load	
	rpm	hp	kWm	hp	kWm	hp
1,800	530	395	398	296	265	198

Exhaust Emissions Data @ 1800 rpm

Component	Standby Power			75% Load			50% Load		
	g/hp-hr	mg/nm ^{3*}	ppm	g/hp-hr	mg/nm ^{3*}	ppm	g/hp-hr	mg/nm ^{3*}	ppm
Total Hydrocarbons (Wet)	2.0	N/A	681	2.5	N/A	830	3.2	N/A	1029
Non Methane Hydrocarbons (Wet)	0.18	N/A	62	0.22	N/A	75	0.32	N/A	104
NOx (Dry)	1.5	N/A	227	1.5	N/A	228	1.5	N/A	223
CO (Dry)	1.5	N/A	386	1.5	N/A	381	1.6	N/A	402
CO2 (Dry)	462	N/A	N/A	474	N/A	N/A	514	N/A	N/A
HCHO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
VOC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
O2 (Dry)	7.9%			7.6%			7.5%		
BSFC	7881 BTU/hp-hr			8158 BTU/hp-hr			8744 BTU/hp-hr		
Ignition timing (BTDC)	32°			32°			32°		

* mg/nm³ is measured @ 5% O₂

Note: This emissions information is not meant to be referenced during engine commissioning or tuning. Please consult the relevant tuning procedure documents for emissions setpoint information.

Test Methods and Conditions:

Steady-State emissions recorded per ISO 8178-1 during operation at rated engine speed (+/- 2%) and stated constant load (+/- 2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specifications:

Dry processed natural gas fuel with 905 BTU per standard cubic foot lower heating value.

Reference Conditions:

25 °C (77 °F) Air Inlet Temperature, 99.5 kPa (29.39 in-Hg) Barometric Pressure [152 m (500 ft) altitude], and relative humidity of 50%.

Data was taken for a single engine test with the Test Method, Fuel Specification and Reference Conditions stated above. Field tests using alternate Test Methods, Fuel or Reference Conditions may yield different results.

Emissions Data Tolerances:

NOx - +/- 5%, Hydrocarbons - +/- 5%, CO - +/- 5%
 CO2 - +/- 5%, O2 - +/- 5%

CHIEF ENGINEER: Kendra Eads (Application)
Lynn Zopff (Base Engine)



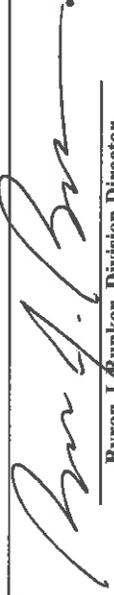
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2015 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT**

**OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Cummins Inc.
(U.S. Manufacturer or Importer)

Certificate Number: FCExB19.0ENA-003

Effective Date:
12/03/2014
Expiration Date:
12/31/2015


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
12/03/2014
Revision Date:
N/A

Manufacturer: Cummins Inc.

Engine Family: FCExB19.0ENA

Certification Type: Stationary (Part 60)

Fuel: Natural Gas (CNG/LNG)

Emission Standards: CO (g/Hp-hr) : 4

VOC (g/Hp-hr) : 1

NOx (g/Hp-hr) : 2

Emergency Use Only: Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Appendix B

Previous Review for Similar Unit



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 16, 2013

Jeffrey Barger
P.O. Box 2450
Clarksburg, WV 26302-2450

Re: Withdrawal of Permit Application
Dominion Transmission, Inc.
Racket Newberne M&R Facility
Cox Mills, Gilmer County, WV
Permit Application G60-C055
Plant ID No.: 021-00021

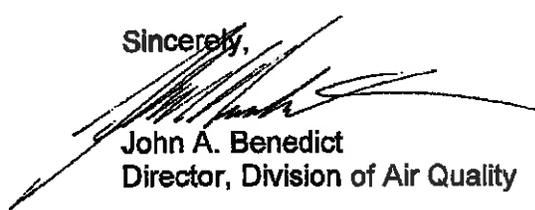
Dear Mr. Jeffrey Barger:

In accordance with your letter received on November 21, 2013, this Division hereby acknowledges the withdrawal of your company's application for a G60-C General Permit Registration for a Kohler 20 RESA, 27 bhp emergency generator/engine to be located at your Racket Newberne M&R Facility located near Cox Mills, Gilmer County, WV.

A permit registration was not needed for the generator engine because the generator was not deemed to be a stationary source and there are no substantive requirements. Although 40 CFR 60 Subpart JJJJ does apply, no performance tests are required. Dominion is aware that it must maintain maintenance records, a copy of the engine certification and fulfill any other applicable requirement(s) of Subpart JJJJ.

No further action will be taken by this Division regarding the G60-C General Permit Registration proposed in application G60-C055.

Sincerely,



John A. Benedict
Director, Division of Air Quality

JAB/jcl
cc: John Legg
Permit Writer

Meghann Quinn, Dominion Transmission, Inc.

Promoting a healthy environment.