

February 20, 2020

Steve Glickauf  
Bin SC 1103  
Southern Power Company  
30 Ivan Allen Jr. Blvd. NW  
Atlanta, GA 30308

Subject: Notification of Emergency Generator Installation  
Skookumchuck Wind Energy Project (SUN – 228)

Dear Mr. Glickauf:

The Southwest Clean Air Agency (SWCAA) received your Small Unit Notification (SUN) on February 4, 2020 for installation and operation of an emergency generator engine at 1800 Pigeon Spring Wind Farm Road. For administrative and tracking purposes SWCAA has assigned tracking number SUN-228 to this notification. This notification was filed in accordance with SWCAA 400-072 and applies to the installation of one emergency generator engine. The new unit was identified as:

- (1) Propane-fired Generac AQMD model 6.8GLPNGD-130 engine to drive a 100 kW Generac generator set. The engine meets EPA emission standards for stationary emergency use.

SWCAA has completed a review of your notification and the associated support information and has determined that the notification meets the requirements of SWCAA 400-072(2). Once installed, affected equipment must maintain compliance with the requirements of SWCAA 400-072(5)(c) "**Emergency service internal combustion engines**". A copy of the relevant SWCAA 400-072 section is attached for your information.

Be advised that emission units installed pursuant to SWCAA 400-072 are subject to source registration and periodic inspection. Registration fees for this equipment will be invoiced consistent with SWCAA 400-100.

If you need further assistance or have any questions regarding these matters, please contact me at (360) 574-3058 extension 130.

Sincerely,



Paul T. Mairose  
Chief Engineer



## SWCAA 400-072 Emission Standards for Selected Small Source Categories

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 09-21-056 filed 10/15/09, effective 11/15/09, 16-19-009 filed 9/8/16, effective 10/9/16; 17-11-078 filed 5/18/17, effective 6/18/17]

### (5) Source categories.

#### (c) Emergency service internal combustion engines.

- (i) **Applicability.** The provisions of this section apply to emergency service internal combustion engines with a rating of 50 or more, but less than 1,000 horsepower (e.g., emergency generators, fire pumps, sewer lift stations, etc.).
- (ii) **Emission limits and standards.**
  - (A) Visible emissions from diesel fired engine exhaust stacks shall not exceed ten percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See SWCAA 400, Appendix A). This limitation shall not apply during periods of cold start-up.
- (iii) **General requirements.**
  - (A) Liquid fueled engines shall only be fired on #2 diesel or biodiesel. Fuel sulfur content of liquid fuels shall not exceed 0.0015% by weight (15 ppmw). A fuel certification from the fuel supplier may be used to demonstrate compliance with this requirement.
  - (B) Gaseous fueled engines shall only be fired on natural gas or propane.
  - (C) Each compression ignition engine shall be EPA Tier certified and manufactured no earlier than January 1, 2008.
  - (D) Engine operation shall be limited to maintenance checks, readiness testing, and actual emergency use.
  - (E) Engine operation for maintenance checks and readiness testing shall not exceed 100 hours per year. Actual emergency use is unrestricted.
  - (F) Each engine shall be equipped with a nonresettable hourmeter for the purpose of documenting hours of operation.
  - (G) Engine exhaust shall be discharged vertically. Any device that obstructs or prevents vertical discharge is prohibited.
- (iv) **Monitoring and recordkeeping requirements.** The information listed below shall be recorded at the specified intervals, and maintained in a readily accessible form for a minimum of 3 years. With the exception of data logged by a computerized data acquisition system, each required record shall include the date and the name of the person making the record entry.
  - (A) Total hours of operation for each engine shall be recorded annually;
  - (B) Hours of emergency use for each engine shall be recorded annually;
  - (C) Fuel sulfur certifications shall be recorded for each shipment of liquid fuel;
  - (D) Maintenance activities shall be recorded for each occurrence consistent with the provisions of 40 CFR 60.4214;
  - (E) Upset conditions that cause excess emissions shall be recorded for each occurrence; and
  - (F) All air quality related complaints received by the permittee and the results of any subsequent investigation or corrective action shall be recorded promptly after each occurrence.
- (v) **Testing requirements.** None.

- (vi) **Reporting requirements.**
  - (A) The owner or operator of an affected emission unit shall provide written notification of initial operation to SWCAA within 10 days of occurrence.
  - (B) All air quality related complaints received by the owner or operator shall be reported to SWCAA within three calendar days of receipt.
  - (C) The owner or operator of an affected emergency engine shall report the following information to the Agency no later than March 15<sup>th</sup> for the preceding calendar year:
    - (I) Hours of engine operation; and
    - (II) Air emissions of criteria air pollutants, VOCs, and toxic air pollutants (TAPs).

Control Room Emergency Generator Engine. Potential annual emissions from the combustion of propane were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year.

Control Room Emergency Generator Engine		Rich Burn based on estimated exhaust O <sub>2</sub> < 4%			
Hours of Operation =	200 hours				
Power Output =	149 bhp				
Fuel Consumption Rate =	485.7 ft <sup>3</sup> /hr from Generac - no standard listed				
Propane Heat Content =	2,516 Btu/scf (from 40 CFR 98)				
Propane Heat Content =	91,500 Btu/gal for AP-42 emission factors				
Propane Sulfur Content =	185 ppmw				
Propane Density =	4.24 lbs/gallon (AP-42 Appendix A, 9/85)				
Fuel Consumption =	97,140 ft <sup>3</sup> /yr				
Pollutant	Emission Factor g/bhp-hr	Emission Factor lb/MMBtu	lb/hr	tpy	Emission Factor Source
NO <sub>x</sub>	0.01		0.0033	0.00033	CARB Certification
CO	0.5		0.16	0.016	CARB Certification
VOC	0.17		0.056	0.0056	CARB Certification
SO <sub>x</sub> as SO <sub>2</sub>		0.01715	0.021	0.0021	Mass Balance
PM		0.019	0.024	0.0024	AP-42 Sec 3.2 (7/00)
PM <sub>10</sub>		0.019	0.024	0.0024	AP-42 Sec 3.2 (7/00)
PM <sub>2.5</sub>		0.019	0.024	0.0024	AP-42 Sec 3.2 (7/00)
1,1,2,2-Tetrachloroethane		0.0000253	3.1E-05	3.1E-06	AP-42 Sec 3.2 (7/00)
Acetaldehyde		0.00279	3.4E-03	3.4E-04	AP-42 Sec 3.2 (7/00)
Acrolein		0.00263	3.2E-03	3.2E-04	AP-42 Sec 3.2 (7/00)
Benzene		0.00158	1.9E-03	1.9E-04	AP-42 Sec 3.2 (7/00)
Formaldehyde		0.0205000	2.5E-02	2.5E-03	AP-42 Sec 3.2 (7/00)
Methylene Chloride		0.0000412	5.0E-05	5.0E-06	AP-42 Sec 3.2 (7/00)
Toluene		0.000558	6.8E-04	6.8E-05	AP-42 Sec 3.2 (7/00)
Xylene		0.000195	2.4E-04	2.4E-05	AP-42 Sec 3.2 (7/00)
HAP/TAP Total =				3.5E-03	
CO <sub>2</sub> e					
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	tpy, CO <sub>2</sub> e	
CO <sub>2</sub>	62.87	1	138.60	16.94	40 CFR 98
CH <sub>4</sub>	0.003	25	0.165	0.02	40 CFR 98
N <sub>2</sub> O	0.0006	298	0.394	0.05	40 CFR 98
Total GHG - CO <sub>2</sub> e	61.4611		139.16	17.01	

Notes: The fuel consumption rate and configured horsepower are from a SG100 specification sheet that utilizes a 9 liter engine, not the 6.8 liter engine used here.

**Summary Information (by SWCAA) for SUN-228  
Skookumchuck Wind Energy Project, LLC  
Control Room Emergency Generator Engine**

A 100 kW propane-fired emergency generator set will be installed at the control room in the Skookumchuck Wind Farm substation at 1800 Pigeon Springs Wind Farm Road. The following equipment details were available:

Location:	1800 Pigeon Springs Wind Farm Road Onalaska, WA Lewis County Parcel 036067000000 Center of Parcel: ~ 46°42'40.20"N, 122°35'1.20"W
Engine Make / Model:	Generac / South Coast AQMD Model 6.8GLPNGD-130 (it appears Generac has not assigned a model #)
Engine Family:	KGNXB06.82C4
Engine Serial Number:	3004862732
Fuel:	Propane / LPG
Fuel Consumption:	485.7 ft <sup>3</sup> /hr propane (based on spec. sheet for 8.9 L engine)
Engine Power Rating:	Advertised power: 208 hp @ 3,000 rpm 149 hp (standby with this generator set based on 8.9 L engine specification sheet)
Installation Date:	January 2020
Engine Built (Date):	August 8, 2019
Engine Certification:	Stationary emergency use only
Generator Set Make / Model:	Generac / SG100
Generator Set Output:	100 kW
Stack Description:	Exhausting through 4" diameter stack 3' above grade, 866 cfm @ 1,200°F
Applicable Federal Regulations:	40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart ZZZZ