Clark
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Lewis
Skamania
Wahkiakum

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May 20, 2015

Mr. Eric Kinne
Washington Department of Fish and Wildlife
165 Osprey Lane
Toledo, WA 98591

Subject: Notification of Emergency Generator Engine Installation – Washougal Hatchery Buildings (SUN-085)

Dear Mr. Kinne:

The Southwest Clean Air Agency (SWCAA) received your Small Unit Notification (SUN) on April 24, 2015 for installation and operation of an emergency generator engine to power buildings at the Washougal Salmon Hatchery at 15632 Washougal River Road, Washougal, WA. This unit replaced a Katolight model 59MPX4 generator (engine serial number 3A-28060) used for the same purpose. For administrative and tracking purposes SWCAA has assigned tracking number SUN-085 to this notification. This notification was filed in accordance with SWCAA 400-072 and applies to the installation of one emergency generator engine. The unit was identified as:

(1) 162 bhp diesel-fired Cummins model GSB7-G5 NR3 engine to drive a 100 kW Cummins model DSGAA generator set. The engine is EPA Tier 3 certified 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(4)(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.]

(4) **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 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. Total engine operation shall not exceed 200 hours per year.

(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) Fuel sulfur certifications shall be recorded for each shipment of liquid fuel;

(C) Maintenance activities shall be recorded for each occurrence consistent with the provisions of 40 CFR 60.4214;

(D) Upset conditions that cause excess emissions shall be recorded for each occurrence; and

(E) All air quality related complaints received by the permittee and the results of any subsequent investigation or corrective action shall be recorded for each occurrence.

(v) **Testing requirements.** None.

(vi) **Reporting requirements.**

(A) All air quality related complaints received by the owner or operator shall be reported to SWCAA within three calendar days of receipt.

(B) The owner or operator of an affected emergency engine shall report the following information to the Agency no later than March 15th for the preceding calendar year:

(I) Hours of engine operation; and

(II) Air emissions of criteria air pollutants, VOCs, and toxic air pollutants (TAPs).

Summary Information (by SWCAA) for SUN-085
Washington Department of Fish and Wildlife
Washougal Hatchery Buildings Emergency Generator Engine

SUN-085 was submitted for installation of a 100 kW diesel-fired emergency generator set to supply emergency power to the Washoughal Hatchery buildings. This unit replaced a Katolight model 59MPX4 generator (engine serial number 3A-28060) used for the same purpose. The following equipment details were available:

Location:	Washougal Salmon Hatchery, 15632 Washougal River Road, Washougal, WA
Engine Make / Model:	Cummins / QSB7-G5 NR3
Engine Serial Number:	73794672
Fuel:	Diesel
Fuel Consumption:	8.7 gallons per hour at full standby load
Horsepower Rating:	162 bhp at full generator standby (324 hp nameplate)
Installation Date:	February – March 2015
Engine Built (Date):	January 16, 2015
Engine Certification:	EPA Tier 3 for stationary emergency
Generator Set Make / Model:	Cummins / DSGAA-1500673
Generator Set Output:	100 kW
Stack Description:	Not provided – photo show a vertical extension 1,106 acfm at 807°F
Applicable Federal Regulations:	40 CFR 60 Subpart IIII 40 CFR 63 Subpart ZZZZ

Washougal Hatchery Buildings Emergency Generator – April 23, 2015

Washougal Hatchery Buildings Emergency Generator Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year.

Washougal Hatchery Buildings Emergency Generator Engine

Hours of Operation =	200	hours
Power Output =	162	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	8.7	gal/hr
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor g/(hp-hr)	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	1.94	0.69	0.069	Cummins - Full Standby
CO	0.83	0.30	0.030	Cummins - Full Standby
VOC	0.12	0.043	0.0043	Cummins - Full Standby
SO_X as SO_2		0.0019	0.00019	Mass Balance
PM	0.10	0.036	0.0036	Cummins - Full Standby
PM_{10}	0.10	0.036	0.0036	Cummins - Full Standby
$PM_{2.5}$	0.10	0.036	0.0036	Cummins - Full Standby

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.05	23	20	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.02	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.05	40 CFR 98
Total GHG - CO_2e	74.0		163.6	23	20	