

New for Emissions Inventory Reporting Year 2018:

Stationary Reciprocating Internal Combustion Engines

SCDHEC's Emissions Inventory Section has developed a new procedure to use when estimating emissions from stationary engine sources. Facilities may choose to use emissions factors based on AP-42 Chapter 3 or 40 CFR part 60/63. Given the large number of stationary engines tracked for emissions inventory purposes, facilities are strongly encouraged to use one of these methods, rather than relying on manufacturer's estimates, certifications, or guarantees.

A. Spark Ignition Engines:

- For spark ignition emission engines (generally these engines use propane, natural gas, gasoline, or landfill gas), continue to use AP-42 factors. See the SLEIS Emissions Factor table for a list of accepted pollutants and emissions factors per SCC.
- The Emissions inventory Section believes utilizing 40 CFR Subpart JJJJ emission standards as emission factors would impose an undue burden, given the plethora of different engine types, fuels, utilizations, etc. Also because the emission standards only partially cover criteria pollutants, the use of AP-42 is still necessitated.

B. Compression Ignition Engines:

- For engines other than spark ignition, the facility has the option of using AP-42 Chapter 3 factors or 40 CFR Subpart IIII emission standards.
- AP-42 Method
 - If your engine is an insignificant activity, you are only required to report on it once and therefore you may choose to leave the data currently entered in SLEIS as is.
 - Emissions based on AP-42 are given a method code of 29. See the SLEIS Emissions Factor table for a list of accepted pollutants and emissions factors per SCC.
- 40 CFR part 60 subpart IIII Emissions Standards
 - For compression ignition engines (i.e. diesel) subject to NSPS, 40 CFR part 60 subpart IIII emission standards may be used by facilities. In order to do so, the following information about the engine must be ascertained:
 - The cylinder displacement in liters;
 - The engine horsepower rating (not the electrical generation rating);
 - Whether it is subject to NSPS (your air permit should address this) or not;
 - Year of manufacture (non-NSPS engines are generally made before 2007);
 - The engine's use, i.e. non-emergency, emergency, or fire pump.

-- Include the above engine information in the comments section of the unit process tab in SLEIS for the process (engine) in question so that it can be reviewed by DHEC staff.

-- A spreadsheet/tool with the Subpart III emission standards converted to lb/hp-hr or lb/mmBtu is available on the SLEIS website or Emissions Inventory webpage for your convenience.

-- Enter the emission factors obtained from the spreadsheet/tool for both criteria pollutants and HAPs into SLEIS along with your fuel throughput in order to calculate total emissions.

-- Use SLEIS method code 8 for any emissions entered in accordance with this method.

C. Hazardous Air Pollutants (HAPs):

- HAP emissions for *non*-NSPS compression ignition engines and all spark ignition engines should be derived using AP-42 emission factors.

-- Use method code 29 in SLEIS

- HAP emissions for NSPS compression ignition engines have been adjusted based on the reduced VOC emission standards and so use the aforementioned spreadsheet to determine emission factors for those.

-- Use method code 8 in SLEIS.

D. Miscellaneous:

- The spreadsheet/tool uses fuel throughputs in lb/hp-hr or lb/MMBtu so you may have to do a conversion as below if you are tracking the fuel throughput in some other unit such as gallons.

- If your energy input is in thousand gallons of diesel, use a heat value of 0.138 MMBtu/gal.

- If your energy input is in thousand gallons of gasoline, use a heat value of 0.125 MMBtu/gal.

- If your energy input is in thousand cubic feet of natural gas, use a heat value of 1026 btu/ft³.

- If your energy input is in thousand cubic feet of landfill gas, use a heat value of 485 btu/ft³.

- If your energy input is in thousand gallons of LPG, use a heat value of 92000 btu/gal.