

Electrical Equipment Manufacture or Refurbishment



Subpart SS, Greenhouse Gas Reporting Program

Manufacturers and refurbishers of electric power transmission and distribution equipment insulated with sulfur hexafluoride (SF₆) and/or perfluorocarbons (PFCs) whose purchases exceed 23,000 lbs per year must report emissions of SF₆ and/or PFCs from equipment testing, manufacturing (including filling), decommissioning and disposal, refurbishing, and from storage cylinders. Manufacturers and refurbishers are required to collect emission data, calculate GHG emissions, and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting per the requirements of 40 CFR Part 98 Subpart SS – Electrical Equipment Manufacture or Refurbishment.

How Is This Source Category Defined?

Electric equipment manufacturers and refurbishers include those facilities that manufacture and/or refurbish SF₆- or PFC-insulated closed-pressure equipment and sealed-pressure equipment including gas-insulated substations, circuit breakers and other switchgear, gas-insulated lines, or power transformers containing SF₆ or PFCs.

What Greenhouse Gases Must Be Reported?

The rule requires each manufacturer to report:

- SF₆ and PFCs emissions from electrical equipment manufacturing.
- SF₆ and PFCs emissions from electrical equipment refurbishing.
- SF₆ and PFCs emissions from electrical equipment testing.
- SF₆ and PFCs emissions from electrical equipment decommissioning and disposal.
- SF₆ and PFCs emissions from storage cylinders and other containers.
- SF₆ and PFCs emissions from electrical equipment installation that occurs before title to the equipment is transferred to the customer.

In addition, each facility is required to report carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) emissions from each stationary combustion unit on site by following the requirements of 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources). The information sheet on general stationary fuel combustion sources summarizes the requirements for calculating and reporting emissions from these units and is available at <https://www.epa.gov/ghgreporting/subpart-c-information-sheet>.

How Must Greenhouse Gas Emissions Be Calculated?

In addition to the information required by the General Provisions at 40 CFR 98.3(c) each owner or operator of electric power systems must calculate SF₆ and PFC emissions at the facility level using a mass-balance approach, by summing the decrease in SF₆ inventory and acquisitions of SF₆, and subtracting disbursements of SF₆, which are each defined as follows:

- **Decrease in SF₆ Inventory.** The mass of SF₆ stored in containers at the beginning of the year minus the mass of SF₆ stored in containers at the end of the year.
- **Acquisitions of SF₆.** The sum of the mass of SF₆ purchased from chemical producers or suppliers in bulk, the mass returned by equipment users with or inside equipment, and the mass returned to site after off-site recycling.

- **Disbursements of SF₆.** The sum of the mass of SF₆ contained in new equipment delivered to customers, the mass delivered to equipment users in containers, the mass returned to suppliers, the mass sent off-site for recycling, and the mass sent to destruction facilities. Facilities are required to use engineering calculations to account for emissions that occur between the point of measurement (e.g., the scale where gas containers are weighed before and after equipment charging operations) and the equipment.

PFC emissions (e.g., from transformers that formerly used CFC-113) must be calculated in the same manner as SF₆ emissions by following the mass balance approach outlined above, i.e. by summing the decrease in PFC inventory and acquisitions of PFCs and then subtracting disbursements of PFCs.

SF₆ and PFC emissions from the equipment being installed on the electric power system's premises must also be calculated (when the installation occurs before the title to the equipment is transferred to the electric power entity) using a mass-balance equation.

A checklist for data that must be monitored is available at: <https://www.epa.gov/ghgreporting/subpart-ss-checklist>.

What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), a facility must report annually the following:

- SF₆ and PFC stored in containers at the beginning and end of the year, in pounds.
- SF₆ and PFCs, in pounds, sent off site for destruction.
- SF₆ and PFCs, in pounds, sent off site to be recycled.
- SF₆ and PFCs purchased in bulk, in pounds.
- SF₆ and PFCs, in pounds, returned by equipment users with or inside equipment.
- SF₆ and PFCs, in pounds, returned from off-site after recycling.
- SF₆ and PFCs, in pounds, inside new equipment delivered to customers.
- SF₆ and PFCs, in pounds, inside containers delivered to customers.
- SF₆ and PFCs, in pounds, returned to suppliers.
- The nameplate capacity of new equipment, in pounds, delivered to customers with SF₆ or PFCs inside, if different from the quantity of SF₆ and PFCs inside equipment delivered to customers.
- A description of the engineering methods and calculations used to determine emissions from hoses or other flow lines that connect the container to the equipment that is being filled.
- The emission factor values used for each hose and valve combination and the associated valve fitting sizes and hose diameters.
- The total number of fill operations for each hose and valve combination used to fill equipment or container disbursements.
- If the mass of SF₆ or the PFC disbursed to customers in new equipment is determined by assuming that it is equal to the equipment's nameplate capacity (or partial shipping charge):
 - The mean nameplate capacity for each make, model, and group of conditions.
 - The number of samples and the upper and lower bounds on the 95 percent confidence interval for each make, model, and group of conditions.
- SF₆ and PFCs, in pounds, used to fill equipment at off-site electric power transmission or distribution facilities.
- SF₆ and PFCs, in pounds, used to charge the equipment being installed off-site, prior to leaving the electrical equipment manufacturer facility.

- The nameplate capacity of the equipment, in pounds, installed at off-site electric power transmission or distribution facilities used to determine emissions from installation.
- For any missing data, the reason the data were missing, the parameter for which the data were missing, the substitute parameters used to estimate emissions in their absence, and the quantity of emissions thereby estimated.

When and How Must Reports Be Submitted?

Annual reports must be submitted by March 31 of each year, unless the 31st is a Saturday, Sunday, or federal holiday, in which case the reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system. Additional information on setting up user accounts, registering a facility and submitting annual reports is available at <https://ccdsupport.com/confluence/>.

When Can a Facility Stop Reporting?

There are several scenarios under which a facility may discontinue reporting. These scenarios are summarized in the [Subpart A Information Sheet](#) as well as in an [FAQ](#).

For More Information

For additional information on Subpart SS, visit the [Subpart SS Resources](#) webpage. For additional information on the Greenhouse Gas Reporting Program, visit the [Greenhouse Gas Reporting Program Website](#), which includes information sheets on other rule subparts, [data](#) previously reported to the Greenhouse Gas Reporting Program, [training materials](#), and links to [frequently asked questions](#).

This document is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. The series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the Greenhouse Gas Reporting Program.