

Annex 1 | Subpart DD, U.S. EPA Greenhouse Gas Reporting Rule

The following is meant to be a brief explanation of the U.S. reporting process and requirements for owners and operators of gas-insulated equipment.

Who Is Required to Report?

Owners and operators of electric power transmission and distribution equipment with a total nameplate capacity exceeding 17,820 lbs (7,838 kg) of sulfur hexafluoride (SF₆) and/or perfluorocarbons (PFC) are required to report emissions of these gases from their electric power transmission and distribution systems.

- SF₆ and PFC insulated equipment includes gas-insulated substations, circuit breakers, other switchgear, gas-insulated lines and power transformers containing these gases.
- An electric power system is defined as the collection of SF₆ and/or PFC insulated equipment linked through electric power transmission or distribution lines and operated as an integrated unit by one electric power entity or several entities that have a single owner.

What is the Reporting Cycle?

Subpart DD took effect January 1, 2011. Reporting years correspond with calendar years. Reports must be submitted by March 31st for the prior year information.

How Are Emissions Calculated?

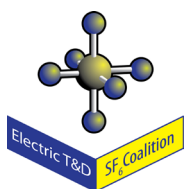
Owners and operators of these systems use a mass-balance process accounting for the following factors:

- Decrease in SF₆ Inventory: The SF₆ stored in containers at the beginning of the year minus the SF₆ stored in containers at the end of the year.
- Acquisitions of SF₆: The sum of the amount of SF₆ that is: 1) purchased from distributors; 2) purchased from equipment manufacturers; and 3) returned to the facility after offsite recycling.
- Disbursements of SF₆: The sum of the amount of SF₆ that is: 1) in bulk and contained in equipment that is sold to other entities; 2) returned to suppliers; and 3) sent off site for recycling or destruction.

(NOTE: Facilities returning containers to a supplier either weigh the containers themselves or have the supplier weigh the containers, obtaining a detailed monthly account, within 1%. The scale used in this process is certified to be accurate within 1% of the true weight and recalibrated at least annually.)

- Net Increase in Total Nameplate Capacity of Equipment Operated: The nameplate capacity of new equipment minus the nameplate capacity of retiring equipment.

(NOTE: Nameplate capacity refers to the full and proper charge of gas specified by the equipment manufacturer rather than the actual, which may reflect leakage.)



Emissions = Decrease in SF₆ Inventory + Acquisitions of SF₆ – Disbursements of SF₆ – Net Increase in the Nameplate Capacity of Equipment

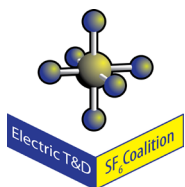
What Information is Reported?

In addition to reporting emissions, owners and operators are required to report the following:

- Nameplate capacity of: 1) equipment containing SF₆ at the beginning of the year; 2) new equipment purchased during the year; and 3) equipment retired during the year.
- Transmission miles (length of lines carrying voltages at or above 34.5 kV).
- SF₆ sales and purchases.
- SF₆ sent off site for destruction.
- SF₆ sent off site for recycling.
- SF₆ returned to site after recycling.
- SF₆ stored in containers at the beginning and end of the year.
- SF₆ with or inside new equipment purchased during the year.
- SF₆ with or inside equipment sold to other entities.
- SF₆ returned to suppliers.

Are there any States that Require Reporting?

California and Massachusetts require unique reporting at the state level for owners and operators located within those states, in addition to federal reporting requirement.



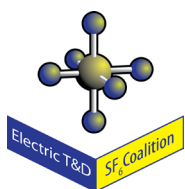
California

California Air Resources Board (CARB) has enacted Subarticle 3.1 to Title 17 of the California Code of Regulations. Subarticle 3.1 is titled Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear.

- Gas Insulated Switchgear (GIS) is defined as all electric power equipment insulated with SF₆ gas regardless of location. This includes switches, stand-alone gas-insulated equipment, and any combination of electrical disconnects, fuses, electrical transmission lines, transformers and/or circuit breakers used to isolate gas insulated electrical equipment.
- The methodology used to calculate annual emissions is the identical mass balance model used in Subpart DD of the U.S. EPA Greenhouse Gas Reporting Rule.
- The table below shows the maximum annual SF₆ emission rate for each calendar year for each GIS owner.

Calendar Year	Max Allowable Emission Rate
2011	10.0%
2012	9.0%
2013	8.0%
2014	7.0%
2015	6.0%
2016	5.0%
2017	4.0%
2018	3.0%
2019	2.0%
2020 and each Calendar Year thereafter	1.0%

- Emergency Event Exemption:
 - A GIS owner may request emissions from an emergency event to be exempted from the calculation of the maximum allowable emission rate if it is demonstrated to the Executive Officer's satisfaction that the release of SF₆:
 - Could not have been prevented by the exercise of prudence, diligence and care; and
 - Was beyond the control of the GIS owner.
 - The GIS owner must submit the request within 30 calendar days after the occurrence of the emergency event and must provide a detailed description of the emergency event.



Massachusetts

Massachusetts Department of Environmental Protection (Mass DEP) has enacted 310 CMR 7.72: Reducing Sulfur Hexafluoride Emissions from Gas-Insulated Switchgear.

- Gas-insulated switchgear of FIS means all electrical power system equipment insulated with SF₆ gas. Gas-insulated switchgear (GIS) includes switches, stand-alone gas-insulated equipment, and any combination of electrical disconnects, fuses, electrical transmission lines, transformer and/or circuit breakers used to isolate gas-insulated electrical power system equipment.
- The methodology used to calculate annual emissions is the identical mass balance model used in Subpart DD of the U.S. EPA Greenhouse Gas Reporting Rule.
- The table below shows the maximum annual SF₆ emission rate for each calendar year for each GIS owner.

Calendar Year	Max Allowable Emission Rate
2015	3.5%
2016	3.0%
2017	2.5%
2018	2.0%
2019	1.5%
2020 and each Calendar Year thereafter	1.0%

- Emergency Event Exemption:
 - A federal reporting GIS owner may exempt emission from a sudden and unforeseen event from the calculation of the maximum allowable emission rate if the federal reporting GIS owner demonstrates the release of SF₆:
 - Was caused by an emergency event, such as a fire, flood, earthquake, or act of vandalism; and
 - Could not have been prevented by the exercise of prudence, diligence, and care; and
 - Was beyond the control of the federal reporting GIS owner; or
 - Was necessary to avoid an immediate electrical system outage.
 - In order for emissions to be exempted from the calculation of the maximum allowable emission rate, Mass DEP requires a detailed description of the emergency event.

