SF_6 Fugitive Emissions Methodology

(This method would also be used for Fugitive HFC
from Cooling Units Associated with Power Generation)

This mass-balance methodology is taken from the Emissions Inventory Reporting Protocol of the U.S. EPA SF_6 Emission Reduction Partnership for Electric Power Systems. The method works by tracking and systematically accounting for all company uses of SF_6 during the reporting year. The quantity of SF_6 that cannot be accounted for is then assumed to have been emitted to the atmosphere. The method has four sub-calculations (A, B, C, and D) and a final total (E).

A. Change in Inventory. This is the difference between the quantity of SF_6 in storage at the beginning of the year and the quantity in storage at the end of the year. The "quantity in storage" includes SF_6 gas contained in cylinders (such as 115-pound storage cylinders), gas carts, and other storage containers. It does not refer to SF_6 gas held in operating equipment. The change in inventory will be negative if the quantity of SF_6 in storage increases over the course of the year.

B. Purchases/Acquisitions of SF_6. This is the sum of all the SF_6 acquired from other entities during the year either in storage containers or in equipment.

C. Sales/Disbursements of SF_6. This is the sum of all the SF_6 sold or otherwise disbursed to other entities during the year either in storage containers or in equipment.

D. Change in Total Nameplate Capacity of Equipment. This is the net increase in the total volume of SF_6-using equipment during the year. Note that "total nameplate capacity" refers to the full and proper charge of the equipment rather than to the actual charge, which may reflect leakage. This term accounts for the fact that if new equipment is purchased, the SF_6 that is used to charge that new equipment should not be counted as an emission. On the other hand, it also accounts for the fact that if the amount of SF_6 recovered from retiring equipment is less than the nameplate capacity, then the difference between the nameplate capacity and the recovered amount has been emitted. This quantity will be negative if the retiring equipment has a total nameplate capacity larger than the total nameplate capacity of the new equipment.

E. Total Annual Emissions. This is the total amount of SF_6 emitted over the course of the year, based on the information provided above. Thus total annual fugitive SF_6 emitted equals A+B-C-D.

SF_6 Emissions Reduction Partnership for Electric Power Systems

Change in Inventory (SF_6 contained in cylinders, not electrical equipment)

Inventory (in cylinders, **not** equipment)	AMOUNT (lbs.)
1. Beginning of Year	
2. End of Year	
A. Change in Inventory (1 - 2)	-

Purchases/Acquisitions of SF_6

	AMOUNT (lbs.)
3. SF_6 purchased from producers or distributors in cylinders	
4. SF_6 provided by equipment manufacturers with/inside equipment	
5. SF_6 returned to the site after off-site recycling	
B. Total Purchases/Acquisitions (3+4+5)	-

Sales/Disbursements of SF_6

	AMOUNT (lbs.)
6. Sales of SF_6 to other entities, including gas left in equipment that is sold	
7. Returns of SF_6 to supplier	
8. SF_6 sent to destruction facilities	
9. SF_6 sent off-site for recycling	
C. Total Sales/Disbursements (6+7+8+9)	-

Change in Nameplate Capacity

	AMOUNT (lbs.)
10. Total nameplate capacity (proper full charge) of new equipment	
11. Total nameplate capacity (proper full charge) of retired or sold equipment	
D. Change in Capacity (10 - 11)	-

Total Annual Emissions

	lbs. SF_6	
E. Total Emissions (A+B-C-D)	-	-