

**Supporting Statement Part A:  
Information Collection Request  
for the Mandatory Reporting of Greenhouse Gases,  
Additional Sources of Fluorinated GHGs – Final Rule**

Including:

Subpart I: Electronics Manufacturing;  
Subpart L: Fluorinated Gas Production;  
Subpart DD: Electric Transmission and Distribution Equipment Use;  
Subpart SS: Sulfur Hexafluoride and Perfluorocarbons from  
Electrical Equipment Manufacture or Refurbishment; and  
Subpart QQ: Importers and Exporters of Fluorinated GHGs  
Inside Pre-charged Equipment and Closed-cell Foams

**EPA ICR No. 2373.02**

**1. IDENTIFICATION OF THE INFORMATION COLLECTION**

**1(a) Title of the Information Collection**

TITLE: “Mandatory Reporting of Greenhouse Gases, Additional Sources of Fluorinated GHGs.”

**1(b) Short Characterization/Abstract**

The United States (U.S.) Environmental Protection Agency (EPA) is promulgating a regulation to require monitoring and reporting of greenhouse gas (GHG) emissions from additional sources of fluorinated GHGs, including electronics manufacturing (Subpart I), fluorinated gas production (Subpart L), electrical equipment use (Subpart DD), electrical equipment manufacture or refurbishment (Subpart SS), as well as importers and exporters of pre-charged equipment and closed-cell foams (Subpart QQ). This rule requires monitoring and reporting of GHGs for these source categories only for sources with CO<sub>2</sub> equivalent emissions, imports, or exports above certain threshold levels.

EPA initially proposed reporting requirements for electronics, fluorinated GHG production, and electrical equipment use on April 12, 2009 (74 FR 16448) as part of the Final MRR at 40 CFR part 98, a larger rulemaking effort to establish a GHG reporting program for all sectors of the economy. In addition, EPA requested comment on requiring reporting of the quantities of fluorinated GHGs imported and exported inside pre-charged equipment and foams.

EPA received a number of lengthy, detailed comments for these source categories. The comments raised concerns about the costs and technical feasibility of implementing subparts I and L as initially proposed, requested clarification of how “facility” should be interpreted under subpart DD, and both favored and opposed a requirement to report imports of fluorinated GHGs

contained in imported and exported pre-charged equipment and closed-cell foams. For this reason, EPA did not include requirements for these source categories in the Final MRR and instead decided to re-propose significant pieces of these subparts.

For subparts I and L, the rule incorporates a number of changes including, but not limited to, the addition of different methodologies that provide improved emissions coverage at a lower cost burden to facilities as well as the addition of more flexibility in how and how frequently the underlying data are gathered. Furthermore, EPA is requiring facilities to report emissions from manufacture or refurbishment of electrical equipment and to report the quantities of fluorinated GHGs imported and exported inside pre-charged equipment and foams.

## **2. NEED FOR AND USE OF THE COLLECTION**

### **2(a) Need/Authority for the Collection**

Signed into law on December 26, 2007, the FY2008 Consolidated Appropriations Act (henceforth referred to as the “Appropriations Act”) directed EPA to “develop and publish a draft rule not later than 9 months after the date of enactment of this Act, and a final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy of the United States.”

The accompanying explanatory statement directed EPA to “use its existing authority under the CAA” to develop a mandatory GHG reporting rule. “The Agency is further directed to include in its rule reporting of emissions resulting from upstream production and downstream sources, to the extent that the Administrator deems it appropriate. The Administrator shall determine appropriate thresholds of emissions above which reporting is required, and how frequently reports shall be submitted to EPA. The Administrator shall have discretion to use existing reporting requirements for electric generating units” under §821 of the 1990 CAA amendments.

In accordance with this directive, EPA is proposing to extend the mandatory reporting program using its authority under §114 of the CAA. CAA §114(a) provides EPA broad authority to collect data for the purpose of, among other things, “carrying out any provision” of the Act. CAA section 114(a)(1) authorizes the Administrator to require emissions sources, persons subject to the CAA, or persons whom the Administrator believes may have necessary information to monitor and report emissions and provide such other information the Administrator requests for the purposes of carrying out any provision of the CAA.

Although this discussion is not a comprehensive listing of how information may be collected to assist EPA in carrying out provisions of the CAA, it illustrates why it is reasonable for EPA to propose this rule under the CAA because it gathers information from targeted sources to ensure a comprehensive assessment of how to best use the CAA to address GHG emissions and climate change.

The Agency believes that information collected by the rule will also prove useful to legislative efforts to address GHG emissions.

## **2(b) Practical Utility/Users of the Data**

The greatest benefit of mandatory reporting of industry GHG emissions to government will be realized in developing future GHG policies. For example, in the EU's Emissions Trading System, a lack of accurate monitoring at the facility level before establishing CO<sub>2</sub> allowance permits resulted in allocation of permits for emissions levels an average of 15 percent above actual levels in every country except the United Kingdom.

A mandatory reporting system will benefit the public by increased transparency of facility emissions data. Transparent, public data on emissions allows for accountability of polluters to the public stakeholders who bear the cost of the pollution. Citizens, community groups, and labor unions have made use of data from Pollutant Release and Transfer Registers to negotiate directly with polluters to lower emissions, circumventing greater government regulation. Publicly available emissions data also will allow individuals to alter their consumption habits based on the GHG emissions of producers.

Benefits to industry of GHG emissions monitoring include the value of having independent, verifiable data to present to the public to demonstrate appropriate environmental stewardship, and a better understanding of their emission levels and sources to identify opportunities to reduce emissions. Such monitoring allows for inclusion of standardized GHG data into environmental management systems, providing the necessary information to achieve and disseminate their environmental achievements.

Standardization will also be a benefit to industry; once facilities invest in the institutional knowledge and systems to report emissions, the cost of monitoring should fall and the accuracy of the accounting should improve. A standardized reporting program will also allow for facilities to benchmark themselves against similar facilities to understand better their relative standing within their industry.

Additionally, reporting of fluorocarbons can be used to assess the overall volume and importance of compounds for which global warming potentials (GWPs) have not been evaluated and to help identify which compounds should have their GWPs evaluated first. In addition, once GWPs have been identified for these compounds, historical reports in tons of chemical can be converted into CO<sub>2</sub>e. Without a comprehensive reporting requirement, such historical information could be lost. Ultimately, all of this information can be used to inform policy decisions regarding the appropriate type and scope of emission reduction measures for these gases. Considering the modest cost of reporting production, import, and export of such compounds, the potential value of this information justifies a comprehensive definition of fluorinated GHG.

The rule is not intended to be a survey and the respondents affected by the rule are not intended to be a statistical sample of a larger universe of entities. EPA does not intend to use the data collected under this rule to characterize non-reporting entities or to draw statistical inferences about a larger population.

### 3. NONDUPLICATION, CONSULTATIONS, AND OTHER COLLECTION CRITERIA

#### 3(a) Nonduplication

In developing the April 2009 initial proposal as well as this additional rulemaking, EPA reviewed monitoring methods included in international guidance (e.g., Intergovernmental Panel on Climate Change (IPCC)), as well as Federal voluntary programs (e.g., EPA Perfluorocarbon (PFC) Reduction/Climate Partnership for the Semiconductor Industry and the U.S. Department of Energy (DOE) Voluntary Reporting of Greenhouse Gases Program (1605(b))), corporate protocols (e.g., World Resources Institute and World Business Council for Sustainable Development GHG Protocol) and industry guidance (e.g., 2006 ISMI Guideline for Environmental Characterization of Semiconductor Process Equipment).

EPA also reviewed State reporting programs (e.g., California and New Mexico) and Regional partnerships (e.g., The Climate Registry, the Western Regional Air Partnership). These are important programs that not only led the way in reporting of GHG emissions before the Federal government acted but also assist in quantifying the GHG reductions achieved by various policies. Many of these programs collect different or additional data as compared to this proposed rule. For example, State programs may establish lower thresholds for reporting, request information on areas not addressed in EPA's reporting rule, or include different data elements to support other programs (e.g., offsets). For further discussion on the relationship of this proposed rule to other programs, please refer to the preamble to the Final MRR (40 CFR Part 98).

Documentation of EPA's review of GHG monitoring protocols used by federal, state, and international voluntary and mandatory GHG programs, and the review of state mandatory GHG rules, can be found in the docket at EPA-HQ-OAR-2008-0508-056. The programs that specifically relate to fluorinated GHG reporting are described below:

- EPA reviewed the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Inventory), which is an annual comprehensive top-down assessment of national GHG emissions. While the Inventory is compiled from national surveys, which are not broken down at the geographic or facility level, the rule focuses on bottom-up data from individual facilities that exceed appropriate thresholds. The bottom-up approach to data collection in the proposed rule can help EPA transition to the IPCC 2006 guidelines for capture, transport, and geological storage at the appropriate time.

- The Agency also examined the voluntary GHG registry that the U.S. DOE’s Energy Information Administration (EIA) implements under §1605b of the Energy Policy Act. Under EIA’s “1605b program,” reporters can choose to prepare an entity-wide GHG inventory and identify specific GHG reductions made by the entity. EPA’s mandatory GHG reporting rule covers a much broader set of reporters, primarily at the facility rather than entity-level, but this reporting rule is not designed with the specific intent of reporting of emission reductions, as is the 1605(b) program.
- The DOE also administers the Climate Vision program (Voluntary Innovative Sector Initiatives: Opportunities Now), whose goal includes accelerating the transition to technologies, practices, and processes that are capable of reducing, capturing, or sequestering GHGs. All voluntary reporting under the Climate Vision Program is covered under 1605(b), and as such, it also does not meet EPA’s needs for mandatory reporting.
- Launched in 1999, the “EPA SF<sub>6</sub> Emission Reduction Partnership for Electric Power Systems” currently has over 80 systems from across the U.S. reporting and has proven to be a practical and reasonable approach for the collection of emissions data. The reporting requirements for Subpart SS of the proposed rule are modeled after the system-wide reporting of the SF<sub>6</sub> Emission Reduction Partnership. This method is consistent with the reported servicing and maintenance practices of many SF<sub>6</sub>-insulated equipment owners, which makes the approach less burdensome and more efficient than using a substation or per piece of equipment source definition for “facility” in Subpart SS.

A growing number of programs at the state, tribal, territorial, and local level require emission sources in their respective jurisdictions to monitor and report GHG emissions. To reduce burden on reporters and program agencies, the Agency would share emissions data with the exception of any confidential business information (CBI) data with relevant agencies or approved entities using, where practical, shared tools and infrastructure.

**3(b) Public Notice Required Prior to Information Collection Request (ICR)  
Submissions to OMB**

As part of the Federal Register notice on the proposed regulation, EPA solicited comments on this information collection and the estimates in the final ICR. EPA solicited comments on specific aspects of the proposed information collection, as described below:

- 1) Whether the collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;
- 2) Whether the Agency’s burden estimate is accurate including the validity of the methodology and assumptions used;
- 3) How to enhance the quality, utility, and clarity of the information to be collected; and
- 4) How to minimize the burden on respondents, including use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology.

### **3(c) Consultations**

During the development of the Final MRR, EPA conducted a proactive communications outreach program to inform the public about the rule development effort. Prior to the proposal signature (March 10, 2009), EPA staff held more than 100 meetings with stakeholders. EPA also met with federal agencies, including DOE and the U.S. Department of Agriculture, which have programs relevant to GHG emissions.

Prior to the Final MRR signature, EPA held two public hearings, on April 6 and 7, 2009, in Arlington, Virginia, and on April 16, 2009, in Sacramento, California. During the sixty day comment period, EPA received approximately 16,800 comments, 15,800 of which were identical mass mailers. In addition, EPA met with over 4,000 additional people in over 150 groups via webinars, conferences, individual meetings, and other forms of outreach. Details of these meetings are available in the docket (EPA-HQ-OAR-2008-0508).

EPA received a number of lengthy, detailed comments regarding the proposed requirements for electronics and fluorinated GHG production (subparts I and L, respectively), several comments regarding the definition of “facility” for electric power system use (subpart DD), and several comments regarding a reporting requirement for imports and exports of fluorinated GHGs contained inside pre-charged equipment and foams (included in today’s final rule as subpart QQ). These comments, which are described in more detail in the discussions of the individual source categories in the April 12, 2010 proposed rule, raised concerns about the costs and technical feasibility of implementing subparts I and L as initially proposed, requested clarification of how “facility” should be interpreted under subpart DD, and both favored and opposed a requirement to report imports of fluorinated GHGs contained in imported and exported pre-charged equipment and closed-cell foams.

EPA recognized the concerns raised by stakeholders, and decided to re-propose significant pieces of these subparts. The revised proposed rule was published in the Federal Register on April 12, 2010. A public hearing on the proposed rule was held on April 20, 2010 in Washington, DC, and the 60-day public comment period ended on June 11, 2010.

For subparts I and L this rule incorporates a number of changes including, but not limited to, the addition of different methodologies that provide improved emissions coverage at a lower cost burden to facilities as compared to the initial April 2009 proposal. Where aspects of the initial proposals for subparts I and L are retained in this rule, such as in the basic mass-balance methodology for subpart L (as an option for some facilities) and in many of the equations for subpart I, today’s rule adds more flexibility in how and how frequently the underlying data are gathered. In addition, EPA is requiring facilities to report emissions from manufacture or refurbishment of electrical equipment and to report the quantities of fluorinated GHGs imported and exported inside pre-charged equipment and foams.

### **3(d) Effects of Less Frequent Collection**

The reporting frequency for emissions data to EPA has been established to minimize the burden on owners and operators of affected facilities, while ensuring that the reporting rule

collects facility-specific data of sufficient quality to achieve the Agency's objectives. For entities required to report, the rule requires annual reporting.

Facilities not already reporting but required to report under this rule will begin data collection in 2011 following the methods outlined in this rule and will submit data to EPA by March 31, 2012 because the data are crucial to the timely development of future GHG policy and regulatory programs. EPA needs the data quickly at the beginning of every reporting year in order to electronically verify it, publish it as authorized by the CAA, and use it for the purposes described. If the information collection were not carried out on this schedule, the Agency would not be able to develop an informed tracking system of emissions trends across the country. In addition, the annual reporting may eventually be used to climate policies and potential future regulations.

### **3(e) General Guidelines**

This collection of information is consistent with all OMB guidelines under 5 CFR 1320.6.

### **3(f) Confidentiality**

In general, emission data collected under §114 and §208 of the CAA cannot be declared CBI. However, if any CBI is reported under this GHG reporting rule, EPA would protect CBI in accordance with regulations in 40 CFR Chapter 1, Part 2, Subpart B. Although CBI determinations are usually made on a case-by-case basis, EPA has issued guidance on what constitutes emissions data that cannot be considered CBI (956 FR 7042 –7043, February 21, 1991).

### **3(g) Sensitive Questions**

This information collection does not ask any questions concerning sexual behavior or attitudes, religious beliefs, or other matters usually considered private.

## **4. THE RESPONDENTS AND THE INFORMATION REQUESTED**

The respondents in this information collection include owners or operators of electronics manufacturing facilities, fluorinated gas production facilities, electric power systems, and electrical equipment manufacturing facilities, as well as importers and exporters of pre-charged equipment and closed-cell foams that are required to report their GHG emissions to EPA to comply with the rulemaking. To facilitate the analysis, EPA has divided respondents into groups that align with the source categories identified in the rule.

Electronics manufacturing facilities include facilities that manufacture semiconductors, liquid crystal displays (LCDs), micro-electro-mechanical systems (MEMS), photovoltaic cells (PV), and light-emitting diodes (LEDs). The fluorinated gas production source category consists of processes that produce a fluorinated gas from any raw material or feedstock chemical, except for processes that generate HFC-23 during the production of HCFC-22. The electric power

system is defined as all electric transmission and distribution equipment insulated with SF<sub>6</sub> or PFCs that is operated by one electric power entity or several entities that have a single owner. The electrical equipment manufacturing category consists of processes that manufacture or refurbish gas-insulated substations, circuit breakers, other switchgear, gas-insulated lines, or power transformers (including gas-containing components of such equipment) containing sulfur-hexafluoride (SF<sub>6</sub>) or perfluorocarbons (PFCs). The source category, importers and exporters of fluorinated GHGs contained in pre-charged equipment or closed-cell foams, consists of the following suppliers: any entity that is importing or exporting pre-charged equipment that contains a fluorinated GHG, and any entity that is importing or exporting closed-cell foams that contain a fluorinated GHG.

This section lists the industry sectors (GHG source categories) that are required to participate in additional source categories for fluorinated GHGs (subparts I, L, DD, QQ, and SS) of the Final MRR program, the data items required of program participants, and the activities in which participants will collect, assess, and in some cases submit the required data items.

#### **4(a) Respondents/North American Industrial Classification Systems (NAICS) Codes**

Reporting facilities include, but are not limited to, those operating one or more units that exceed the CO<sub>2</sub>e threshold for the industry sectors listed below. Industry sectors are listed below by their corresponding subpart of the rule and their NAICS code for reference.

<b>Part and Subpart</b>	<b>NAICS code(s)</b>
<b>Part 98</b>	
Subpart I: Electronics Manufacturing	334111 Microcomputers manufacturing facilities. 334413 Semiconductor, photovoltaic cells (PV) (solid-state) device manufacturing facilities. 334419 Liquid crystal display (LCD) unit screens manufacturing facilities. 334419 Microelectromechanical devices (MEMS) manufacturing facilities.
Subpart L: Fluorinated GHG Production	325120 Industrial gases manufacturing facilities.
Subpart DD: Electrical Equipment Use	221121 Electric bulk power transmission and control facilities.
Subpart SS: Electrical Equipment Manufacture or Refurbishment	33531 Power transmission and distribution switchgear and specialty transformers manufacturing facilities.



<b>Part and Subpart</b>	<b>NAICS code(s)</b>
Subpart QQ: Importers and Exporters of Pre-charged Equipment and Closed-Cell Foams	423730 Air-conditioning equipment (except room units) merchant wholesalers 333415 Air-conditioning equipment (except motor vehicle) manufacturing 336391 Motor vehicle air-conditioning manufacturing. 423620 Air-conditioners, room, merchant wholesalers 443111 Household Appliance Stores 423730 Automotive air-conditioners merchant wholesalers. 326150 Polyurethane foam products manufacturing 335313 Circuit breakers, power, manufacturing 423610 Circuit breakers merchant wholesalers

#### **4(b) Information Requested**

##### *(i) Data Items*

##### *Reporting Requirements*

**General requirements that apply to all sources.** All respondents that exceed the reporting threshold or that belong to a source category in which all respondents report will be required to submit the general information required in 40 CFR 98.3 and adhere to the reporting, certification, and notification requirements in 40 CFR 98.4 and 40 CFR 98.2, if applicable. In a separate rulemaking package that was published on March 16, 2010, EPA proposed minor harmonizing changes to the general provisions for the GHG reporting rule (40 CFR part 98, subpart A) to accommodate the addition of source categories not included in the 2009 final rule (e.g., subparts proposed in April 2009 but not finalized in 2009, any new subparts that may be proposed in the future). The changes update 98.2(a) on rule applicability and 98.3 regarding the reporting schedule to accommodate any additional subparts and the schedule for their reporting obligations (e.g., source categories finalized in 2010 will not begin data collection until 2011 and reporting in 2012). In addition, many facilities that are affected by the rule have GHG emissions from multiple source categories of 40 CFR Part 98, and they will be required to meet the reporting requirements of the specific subparts that describe these requirements.

**Requirements that apply to all facilities that are covered under Subpart I.** Each electronics manufacturer that meets the definition of this source category must include in each annual report the following information:

1. Annual manufacturing capacity of the facility as determined in Equation I-5.
2. For facilities that manufacture semiconductors, the diameter of wafers manufactured at the facility (mm).
3. Annual emissions of:
  - a. Each fluorinated GHG emitted from each process type for which the facility is required to calculate emissions as calculated in Equations I-6 and I-7.

- b. Each fluorinated GHG emitted from each individual recipe (including those in a set of similar recipes), or process sub-type as calculated in Equations I-8 and I-9, as applicable.
  - c. N<sub>2</sub>O emitted from each chemical vapor deposition process and from other N<sub>2</sub>O-using manufacturing processes as calculated in Equation I-10.
  - d. Each heat transfer fluid emitted as calculated in Equation 1-16.
- 4. The method of emissions calculation used in §98.93.
- 5. Annual production in terms of substrate surface area (e.g., silicon, PV-cell, glass).
- 6. When factors for fluorinated GHG process utilization and by-product formation rates other than the defaults provided in Tables I-3, I-4, I-5, I-6, and I-7 and/or N<sub>2</sub>O utilization factors other than the defaults provided in Table I-8 are used, report the following, as applicable:
  - a. The recipe-specific utilization and by-product formation rates for each individual recipe (or set of similar recipes) and/or facility-specific N<sub>2</sub>O utilization factors.
  - b. For recipe-specific utilization and by-product formation rates, the film or substrate that was etched/cleaned and the feature type that was etched, as applicable.
  - c. Certification that the recipes included in a set of similar recipes are similar, as defined in §98.98.
  - d. Certification that the measurements for all reported recipe-specific utilization and by-product formation rates and/or facility-specific N<sub>2</sub>O utilization factors were made using the International SEMATECH #06124825A-ENG (incorporated by reference, see §98.7), or with International SEMATECH #01104197A-XFR (incorporated by reference, see §98.7) if measurements were made prior to January 1, 2007.
  - e. Source of the recipe-specific utilization and by-product formation rates and/or facility-specific-N<sub>2</sub>O utilization factors.
  - f. Certification that the conditions under which the facility-specific N<sub>2</sub>O utilization factors were made are representative of the facility's N<sub>2</sub>O emitting production processes.
- 7. Annual gas consumption for each fluorinated GHG and N<sub>2</sub>O as calculated in Equation I-11, including where the facility used less than 50 kg of a particular fluorinated GHG or N<sub>2</sub>O during the reporting year. For all fluorinated GHGs and N<sub>2</sub>O used at the facility for which emissions have not been calculated using Equations I-6, I-7, I-8, I-9, and I-10, the chemical name of the GHG used, the annual consumption of the gas, and a brief description of its use.
- 8. All inputs used to calculate gas consumption in Equation I-11, for each fluorinated GHG and N<sub>2</sub>O used.
- 9. Disbursements for each fluorinated GHG and N<sub>2</sub>O during the reporting year, as calculated using Equation I-12.
- 10. All inputs used to calculate disbursements for each fluorinated GHG and N<sub>2</sub>O used in Equation I-12, including all facility-wide gas-specific heel factors used for each fluorinated GHG and N<sub>2</sub>O. If the facility used less than 50 kg of a particular fluorinated GHG during the reporting year, facility-wide gas-specific heel factors do not need to be reported for those gases.

11. Annual amount of each fluorinated GHG consumed for each recipe, process sub-type, or process type, as appropriate, and the annual amount of N<sub>2</sub>O consumed for each chemical vapor deposition and other electronics manufacturing production processes, as calculated using Equation I-13.
12. All apportioning factors used to apportion fluorinated GHG and N<sub>2</sub>O consumption.
13. For the facility-specific apportioning model used to apportion fluorinated GHG and N<sub>2</sub>O consumption under §98.94(c), the following information to determine it is verified in accordance with procedures in §98.94(c)(1) and (2):
  - a. Identification of the quantifiable metric used in the facility-specific engineering model to apportion gas consumption.
  - b. The start and end dates selected under §98.94(c)(2)(i).
  - c. Certification that the gases selected under §98.94(c)(2)(ii) correspond to the largest quantities consumed on a mass basis, at the facility in the reporting year for the plasma etching process type and the chamber cleaning process type.
  - d. The result of the calculation comparing the actual and modeled gas consumption under §98.94(c)(2)(iii).
14. Fraction of each fluorinated GHG or N<sub>2</sub>O fed into a recipe, process sub-type, or process type that is fed into tools connected to abatement systems.
15. Fraction of each fluorinated GHG or N<sub>2</sub>O destroyed or removed in abatement systems connected to process tools where recipe, process sub-type, or process type j is used, as well as all inputs and calculations used to determine the inputs for Equation I-14.
16. Inventory and description of all abatement systems through which fluorinated GHGs or N<sub>2</sub>O flow at the facility, including the number of devices of each manufacturer, model numbers, manufacturer claimed fluorinated GHG and N<sub>2</sub>O destruction or removal efficiencies, if any, and records of destruction or removal efficiency measurements over their in-use lives. The inventory of abatement systems must describe the tools with model numbers and the recipe(s), process sub-type, or process type for which these systems treat exhaust.
17. For each abatement system through which fluorinated GHGs or N<sub>2</sub>O flow at the facility, for which controlled emissions are reported, the following:
  - a. Certification that each abatement system has been installed, maintained, and operated in accordance with manufacturers' specifications.
  - b. All inputs and results of calculations made accounting for the uptime of abatement systems used during the reporting year, in accordance with Equations I-14 and I-15.
  - c. The default destruction or removal efficiency value or properly measured destruction or removal efficiencies for each abatement system used in the reporting year.
  - d. Where the default destruction or removal efficiency value is used to report controlled emissions, certification that the abatement systems for which emissions are being reported were specifically designed for fluorinated GHG and N<sub>2</sub>O abatement. Support this certification by providing abatement system supplier documentation stating that the system was designed for fluorinated GHG and N<sub>2</sub>O abatement.

- e. Where properly measured destruction or removal efficiencies or class averages of destruction or removal efficiencies are used, the following must also be reported:
  - i. A description of the class, including the abatement system manufacturer and model number and the fluorinated GHG(s) and N<sub>2</sub>O in the effluent stream.
  - ii. The total number of systems in that class for the reporting year.
  - iii. The total number of systems for which destruction or removal efficiency was properly measured in that class for the reporting year.
  - iv. A description of the calculation used to determine the class average, including all inputs to the calculation.
  - v. A description of the method used for randomly selecting class members for testing.
- 18. For heat transfer fluid emissions, inputs to the heat transfer fluid mass balance equation, Equation I-16, for each fluorinated GHG used.
- 19. Where missing data procedures were used to estimate inputs into the heat transfer fluid mass balance equation under §98.95(b), the number of times missing data procedures were followed in the reporting year, the method used to estimate the missing data, and the estimates of those data.
- 20. A brief description of each “best available monitoring method” used according to §98.94(a), the parameter measured or estimated using the method, and the time period during which the “best available monitoring method” was used.

**Requirements that apply to all facilities that are covered under Subpart L.** All facilities that meet the definition of this source category must report the following:

1. Report the total mass in metric tons of each fluorinated GHG emitted from:
  - a. Each fluorinated gas production process and all fluorinated gas production processes combined.
  - b. Each fluorinated gas transformation process that is not part of a fluorinated gas production process and all such fluorinated gas transformation processes combined, except report separately fluorinated GHG emissions from transformation processes where a fluorinated GHG reactant is produced at another facility.
  - c. Each fluorinated gas destruction process that is not part of a fluorinated gas production process or a fluorinated gas transformation process and all such fluorinated gas destruction processes combined.
  - d. Venting of residual fluorinated GHGs from containers returned from the field.
2. The chemical identities of the contents of the stream(s) (including process, emissions, and destroyed streams) analyzed under the initial scoping test of fluorinated GHG at §98.124(a), by process.
3. The location and function of the stream(s) (including process streams, emissions streams, and destroyed streams) that were analyzed under the initial scoping test of fluorinated GHG at §98.124(a), by process.
4. The method used to determine the mass emissions of each fluorinated GHG, i.e., mass balance, process-vent-specific emission factor, or process-vent-specific emission calculation factor, for each process and process vent at the facility. For

processes for which the process-vent-specific emission factor or process-vent-specific emission calculation factor are used, report the method used to estimate emissions from equipment leaks.

5. The chemical formula and total mass produced of the fluorinated gas product in metric tons, by chemical and process.

Reporting for mass balance approach. For processes whose emissions are determined using the mass-balance approach under §98.123(b), report the following information for each process on an annual basis. Identify and separately report fluorinated GHG emissions from transformation processes where the fluorinated GHG reactants are produced at another facility.

1. The absolute and relative uncertainties calculated under paragraphs §98.123(b)(1) through (b)(4), as well as the data (including quantities and their uncertainties) used in these calculations.
2. The balanced chemical equation that describes the reaction used to manufacture the fluorinated GHG product and each fluorinated GHG transformation product.
3. The mass and chemical formula of each fluorinated GHG reactant emitted from the process in metric tons.
4. The mass and chemical formula of the fluorinated GHG product emitted from the process in metric tons.
5. The mass and chemical formula of each fluorinated GHG by-product emitted from the process in metric tons.
6. The mass and chemical formula of each fluorine-containing reactant that is fed into the process (metric tons).
7. The mass and chemical formula of each fluorine-containing product produced by the process (metric tons).
8. If §98.123(b)(4) is used to estimate the total mass of fluorine in destroyed or recaptured streams, report the following.
  - a. The mass and chemical formula of each fluorine-containing product that is removed from the process and fed into the destruction device (metric tons).
  - b. The mass and chemical formula of each fluorine-containing by-product that is removed from the process and fed into the destruction device (metric tons).
  - c. The mass and chemical formula of each fluorine-containing reactant that is removed from the process and fed into the destruction device (metric tons).
  - d. The mass and chemical formula of each fluorine-containing by-product that is removed from the process and recaptured (metric tons).
  - e. The demonstrated destruction efficiency of the destruction device for each fluorinated GHG fed into the device from the process in greater than trace concentrations (fraction).
9. If §98.123(b)(15) is used to estimate the total mass of fluorine in destroyed or recaptured streams, report the following.
  - a. The mass of fluorine in each stream that is fed into the destruction device (metric tons).
  - b. The mass of fluorine that is recaptured (metric tons).

- c. The weighted average destruction efficiency of the destruction device calculated for each stream under §98.123(b)(16).
10. The fraction of the mass emitted that consists of each fluorine-containing reactant.
11. The fraction of the mass emitted that consists of the fluorine-containing product.
12. The fraction of the mass emitted that consists of each fluorine-containing by-product.
13. The method used to estimate the total mass of fluorine in destroyed or recaptured streams (specify §98.123(b)(4) or (15)).

Reporting for emission factor and emission calculation factor approach. For processes whose emissions are determined using the emission factor approach under §98.123(c)(3) or the emission calculation factor under §98.123(c)(4), report the following for each process. Fluorinated GHG emissions from transformation processes, where the fluorinated GHG reactants are produced at another facility, should be identified and reported separately from other fluorinated GHG emissions.

1. The identity and quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed).
2. The site-specific, process-vent-specific emission factor(s) or emission calculation factor for each process vent.
3. The mass of each fluorinated GHG emitted from each process vent (metric tons).
4. The mass of each fluorinated GHG emitted from equipment leaks (metric tons).

Reporting for missing data. Where missing data have been estimated pursuant to §98.125, report the reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data.

Reporting of destruction device excess emissions data. Each fluorinated gas production facility that destroys fluorinated GHGs must report the excess emissions that result from malfunctions of the destruction device, and these excess emissions would be reflected in the fluorinated GHG estimates in §98.123(b) and (c). Such excess emissions would occur if the destruction efficiency was reduced due to the malfunction.

Reporting of destruction device testing. By March 31, 2012 or by March 31 of the year immediately following the year in which it begins fluorinated GHG destruction, each fluorinated gas production facility that destroys fluorinated GHGs must submit a report the following information. This report is one-time unless the manufacturer makes a change to the destruction device that would be expected to affect its destruction efficiencies.

1. Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g) (1)(i) through (iv).
2. Chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate the destruction efficiency for each fluorinated GHG, consistent with requirements in §98.124(g) (1), vented to the destruction device.

3. Date of the most recent destruction device test.
4. Name of all applicable Federal or State regulations that may apply to the destruction process.
5. If the manufacturer make a change to the destruction device that would be expected to affect its destruction efficiencies, submit a revised report that reflects the changes, including the revised destruction efficiencies measured for the device under §98.124(g)(2)(ii), by March 31 of the year that immediately follows the change.

Reporting for destruction of previously produced fluorinated GHGs. Each fluorinated gas production facility that destroys fluorinated GHGs must report, separately from the fluorinated GHG emissions reported under paragraphs (b) or (c) of this section, the following for each previously produced fluorinated GHG destroyed:

6. The mass of the fluorinated GHG fed into the destruction device.
7. The mass of the fluorinated GHG emitted from the destruction device.

Reporting of emissions from venting of residual fluorinated GHGs from containers. Each fluorinated gas production facility that vents residual fluorinated GHGs from containers must report the following for each fluorinated GHG vented:

1. The mass of the residual fluorinated GHG vented from each container size and type annually (tons).
2. If applicable, the heel factor calculated for each container size and type.

Reporting of fluorinated GHG products of incomplete combustion (PICs) of fluorinated gases. Each fluorinated gas production facility that destroys fluorinated gases must submit a one-time report by June 30, 2011, that describes any measurements, research, or analysis that it has performed or obtained that relate to the formation of products of incomplete combustion that are fluorinated GHGs during the destruction of fluorinated gases. The report should include the methods and results of any measurement or modeling studies, including the products of incomplete combustion for which the exhaust stream was analyzed, as well as copies of relevant scientific papers, if available, or citations of the papers, if they are not. No new testing is required to fulfill this requirement.

**Requirements that apply to all facilities that are covered under Subpart DD.** Each annual report must contain the following information for each electric power system, by chemical.

1. Nameplate capacity of equipment (pounds) containing SF<sub>6</sub> and nameplate capacity of equipment (pounds) containing each PFC:
  - a. Existing at the beginning of the year (excluding hermetically sealed-pressure switchgear).
  - b. New during the year (all SF<sub>6</sub>-insulated equipment, including hermetically sealed-pressure switchgear).
  - c. Retired during the year (all SF<sub>6</sub>-insulated equipment, including hermetically sealed-pressure switchgear).

2. Transmission miles (length of lines carrying voltages above 35 kilovolt).
3. Distribution miles (length of lines carrying voltages at or below 35 kilovolt).
4. Pounds of SF<sub>6</sub> and PFC stored in containers, but not in energized equipment, at the beginning of the year.
5. Pounds of SF<sub>6</sub> and PFC stored in containers, but not in energized equipment, at the end of the year.
6. Pounds of SF<sub>6</sub> and PFC purchased in bulk from chemical producers or distributors.
7. Pounds of SF<sub>6</sub> and PFC purchased from equipment manufacturers or distributors with or inside equipment, including hermetically sealed-pressure switchgear.
8. Pounds of SF<sub>6</sub> and PFC returned to facility after off-site recycling.
9. Pounds of SF<sub>6</sub> and PFC in bulk and contained in equipment sold to other entities.
10. Pounds of SF<sub>6</sub> and PFC returned to suppliers.
11. Pounds of SF<sub>6</sub> and PFC sent off-site for recycling.
12. Pounds of SF<sub>6</sub> and PFC sent off-site for destruction.

**Requirements that apply to all facilities that are covered under Subpart QQ.**

Each importer of fluorinated GHGs contained in pre-charged equipment or closed-cell foams must submit an annual report that summarizes its imports at the corporate level, except for transshipments, as specified:

1. Total mass in metric tons of each fluorinated GHG imported in pre-charged equipment or closed-cell foams.
2. For each type of pre-charged equipment with a unique combination of charge size and charge type, the identity of the fluorinated GHG used as a refrigerant or electrical insulator, charge size (holding charge, if applicable), and number imported.
3. For closed-cell foams that are imported inside of appliances, the identity of the fluorinated GHG contained in the foam in each appliance, the mass of the fluorinated GHG contained in the foam in each appliance, and the number of appliances imported with each unique combination of mass and identity of fluorinated GHG within the closed-cell foams.
4. For closed cell-foams that are not imported inside of appliances, the identity of the fluorinated GHG in the foam, the density of the fluorinated GHG in the foam (kg fluorinated GHG/cubic foot), and the volume of foam imported (cubic feet) for each type of closed-cell foam with a unique combination of fluorinated GHG density and identity.
5. Dates on which the pre-charged equipment or closed-cell foams were imported.
6. If the importer does not know the identity and mass of the fluorinated GHGs within the closed-cell foam, the importer must report the following:
  - a. Total mass in metric tons of CO<sub>2</sub>e of the fluorinated GHGs imported in closed-cell foams.
  - b. For closed-cell foams that are imported inside of appliances, the mass of the fluorinated GHGs in CO<sub>2</sub>e contained in the foam in each appliance and the number of appliances imported for each type of appliance.
  - c. For closed-cell foams that are not imported inside of appliances, the mass in CO<sub>2</sub>e of the fluorinated GHGs in the foam (kg CO<sub>2</sub>e /cubic foot) and the volume of foam imported (cubic feet) for each type of closed-cell foam.
  - d. Dates on which the closed-cell foams were imported.



- e. Name of the foam manufacturer for each type of closed-cell foam where the identity and mass of the fluorinated GHGs is unknown.
- f. Certification that the importer was unable to obtain information on the identity and mass of the fluorinated GHGs within the closed-cell foam from the closed-cell foam manufacturer or manufacturers.

Each exporter of fluorinated GHGs contained in pre-charged equipment or closed-cell foams must submit an annual report that summarizes its exports at the corporate level, except for transshipments, as specified:

1. Total mass in metric tons of each fluorinated GHG exported in pre-charged equipment or closed-cell foams.
2. For each type of pre-charged equipment with a unique combination of charge size and charge type, the identity of the fluorinated GHG used as a refrigerant or electrical insulator, charge size (including holding charge, if applicable), and number exported.
3. For closed-cell foams that are exported inside of appliances, the identity of the fluorinated GHG contained in the foam in each appliance, the mass of the fluorinated GHG contained in the foam in each appliance, and the number of appliances exported with each unique combination of mass and identity of fluorinated GHG within the closed-cell foams.
4. For closed-cell foams that are not exported inside of appliances, the identity of the fluorinated GHG in the foam, the density of the fluorinated GHG in the foam (kg fluorinated GHG/cubic foot), and the volume of foam exported (cubic feet) for each type of closed-cell foam with a unique combination of fluorinated GHG density and identity.
5. Dates on which the pre-charged equipment or closed-cell foams were exported.
6. If the exporter does not know the identity and mass of the fluorinated GHG within the closed-cell foam, the exporter must report the following:
  - a. Total mass in metric tons of CO<sub>2</sub>e of the fluorinated GHGs exported in closed-cell foams.
  - b. For closed-cell foams that are exported inside of appliances, the mass of the fluorinated GHGs in CO<sub>2</sub>e contained in the foam in each appliance and the number of appliances imported for each type of appliance.
  - c. For closed-cell foams that are not exported inside of appliances, the mass in CO<sub>2</sub>e of the fluorinated GHGs in the foam (kg CO<sub>2</sub>e /cubic foot) and the volume of foam imported (cubic feet) for each type of closed-cell foam.
  - d. Dates on which the closed-cell foams were exported.
  - e. Name of the foam manufacturer for each type of closed-cell foam where the identity and mass of the fluorinated GHG is unknown.
  - f. Certification that the exporter was unable to obtain information on the identity and mass of the fluorinated GHGs within the closed-cell foam from the closed-cell foam manufacturer or manufacturers.

**Requirements that apply to all facilities that are covered under Subpart SS.** All facilities that meet the definition of this source category must submit an annual report that contains the following information at each facility level, by chemical:

1. Pounds of SF<sub>6</sub> and PFCs stored in containers at the beginning of the year.
2. Pounds of SF<sub>6</sub> and PFCs stored in containers at the end of the year.
3. Pounds of SF<sub>6</sub> and PFCs purchased in bulk.
4. Pounds of SF<sub>6</sub> and PFCs returned by equipment users with or inside equipment.
5. Pounds of SF<sub>6</sub> and PFCs returned to site from off site after recycling.
6. Pounds of SF<sub>6</sub> and PFCs inside new equipment delivered to customers.
7. Pounds of SF<sub>6</sub> and PFCs delivered to equipment users in containers.
8. Pounds of SF<sub>6</sub> and PFCs returned to suppliers.
9. Pounds of SF<sub>6</sub> and PFCs sent off site for destruction.
10. Pounds of SF<sub>6</sub> and PFCs sent off site to be recycled.
11. The nameplate capacity of the equipment, in pounds, delivered to customers with SF<sub>6</sub> or PFCs inside, if different from the quantity in paragraph (6) above.
12. 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.
13. The values for EF<sub>C</sub> for each hose and valve combination and the associated valve fitting sizes and hose diameters.
14. The total number of fill operations for each hose and valve combination, or, F<sub>CI</sub> of Equation SS-5.
15. The mean value for each make, model, and group of conditions if the mass of SF<sub>6</sub> or the PFC disbursed to customers in new equipment over the period p is determined by assuming that it is equal to the equipment's nameplate capacity or, in cases where equipment is shipped with a partial charge, equal to its partial shipping charge.
16. The number of samples and the upper and lower bounds on the 95 percent confidence interval for each make, model, and group of conditions if the mass of SF<sub>6</sub> or the PFC disbursed to customers in new equipment over the period p is determined by assuming that it is equal to the equipment's nameplate capacity or, in cases where equipment is shipped with a partial charge, equal to its partial shipping charge.
17. Pounds of SF<sub>6</sub> and PFCs used to fill equipment at off-site electric power transmission or distribution locations, or M<sub>F</sub>, of Equation SS-6.
18. Pounds of SF<sub>6</sub> and PFCs used to charge the equipment prior to leaving the electrical equipment manufacturer or refurbishment facility, or M<sub>C</sub>, of Equation SS-6.
19. The nameplate capacity of the equipment, in pounds, installed at off-site electric power transmission or distribution locations used to determine emissions from installation, or N<sub>I</sub>, of Equation SS-6.
20. For any missing data, report the reason the data were missing, the parameters for which the data were missing, the substitute parameters used to estimate emissions in their absence, and the quantity of emissions thereby estimated.

## *Recordkeeping Requirements*

**General requirements that apply to all sources.** EPA is not proposing any changes to the general recordkeeping requirements that apply to all sources. This information is described in the ICR for the Final MRR (EPA ICR No. 2300.03). In addition, many facilities that are affected by the proposed supplemental rule have GHG emissions from multiple source categories of 40 CFR Part 98, and they will be required to meet the reporting requirements of the specific subparts that describe these requirements.

**Requirements that apply to all facilities that are covered under Subpart I.** All facilities that meet the definition of this source category will be required to retain the following records:

1. All data used and copies of calculations made as part of estimating gas consumption and emissions, including all spreadsheets.
2. Documentation for the values used for fluorinated GHG and N<sub>2</sub>O utilization and by-product formation rates. If facility-specific and recipe-specific utilization and by-product formation rates are used, the following records must also be retained, as applicable:
  - a. Complete documentation and final report for measurements for recipe-specific utilization and by-product formation rates demonstrating that the values were measured using International SEMATECH #06124825A-ENG (incorporated by reference, see §98.7) or, if the measurements were made prior to January 1, 2007, International SEMATECH #01104197A-XFR (incorporated by reference, see §98.7).
  - b. Documentation that recipe-specific utilization and by-product formation rates developed for the facility are measured for recipes that are similar to those used at the facility, as defined in §98.98. The documentation must include, at a minimum, recorded to two significant figures, reactor pressure, flow rates, chemical composition, applied RF power, direct current (DC) bias, temperature, flow stabilization time, and duration.
  - c. Documentation that the facility's N<sub>2</sub>O measurements are representative of the N<sub>2</sub>O emitting processes at the facility.
  - d. The date and results of the initial and any subsequent tests to determine utilization and by-product formation rates.
3. Documentation for the facility-specific engineering model used to apportion fluorinated GHG and N<sub>2</sub>O consumption. This documentation must be part of the site GHG Monitoring Plan as required under §98.3(g)(5). At a minimum, retain the following:
  - a. A clear, detailed description of the facility-specific model, including how it was developed; the quantifiable metric used in the model; all sources of information, equations, and formulas, each with clear definitions of terms and variables; and a clear record of any changes made to the model while it was used to apportion fluorinated GHG and N<sub>2</sub>O consumption across individual recipes (including those in a set of similar recipes), process sub-types, and/or process types.

- b. Sample calculations used for developing a recipe-specific, process sub-type-specific, or process type-specific gas apportioning factor ( $f_{ij}$ ) for the dominant gases used for each individual recipe (including those in a set of similar recipes), process sub-type, or process type.
- 4. For each abatement system through which fluorinated GHGs or  $N_2O$  flow at the facility, for which controlled emissions are reported, the following:
  - a. Documentation to certify the abatement system is installed, maintained, and operated in accordance with manufacturers' specifications.
  - b. Abatement system calibration and maintenance records.
  - c. Where the default destruction or removal efficiency value is used, documentation from the abatement system supplier describing the equipment's designed purpose and emission control capabilities for fluorinated GHG and  $N_2O$ .
  - d. Where properly measured DRE is used to report emissions, dated certification by the technician who made the measurement that the destruction or removal efficiency is calculated in accordance with methods in EPA 430-R-10-003 (incorporated by reference, see §98.7), complete documentation of the results of any initial and subsequent tests, and the final report as specified in EPA 430-R-10-003 (incorporated by reference, see §98.7).
- 5. Purchase records for gas purchased.
- 6. Invoices for gas purchases and sales.
- 7. Documents and records used to monitor and calculate abatement system uptime.

**Requirements that apply to all facilities that are covered under Subpart L.** All facilities that meet the definition of this source category will be required to retain the following dated records:

1. Process information records.
  - a. Identify all products and processes subject to this subpart. Include the unit identification as appropriate.
  - b. Monthly and annual records, as applicable, of all analyses and calculations conducted as required under §98.123, including the data monitored under §98.124, and all information reported as required and §98.126.
2. Scoping test. Retain records documenting the information reported under §98.126(a)(1) and (2).
3. Mass-balance method. Retain the following records for each process for which the mass-balance method was used to estimate emissions.
  - a. The data and calculations used to estimate the absolute and relative errors associated with use of the mass-balance approach.
  - b. The data and calculations used to estimate the mass of fluorine emitted from the process.
  - c. The data and calculations used to determine the fractions of the mass emitted consisting of each reactant ( $FER_d$ ), product ( $FEP$ ), and by-product ( $FEB_k$ ), including the preliminary calculations in §98.123(b)(8)(i).
4. Emission factor and emission calculation factor method. Retain the following records for each process for which the emission factor or emission calculation factor method was used to estimate emissions.

- a. Identify all process vents with emissions of fluorinated GHGs that are less than 10,000 metric tons CO<sub>2</sub>e per year and all process vents with emissions of 10,000 metric tons CO<sub>2</sub>e per year or more. Include the calculation used to develop the preliminary estimate of emissions for each process vent.
  - b. Identify all batch process vents.
  - c. For each vent, identify the method used to develop the factor (i.e., emission factor by emissions test or emission calculation factor).
  - d. The emissions test data and reports (see §98.124(c)(5)) and the calculations used to determine the process-vent-specific emission factor, including the actual process-vent-specific emission factor, the average hourly emission rate of each fluorinated GHG from the process vent during the test and the process feed rate, process production rate, or other process activity rate during the test.
  - e. The process-vent-specific emission calculation factor and the calculations used to determine the process-vent-specific emission calculation factor.
  - f. The annual process production quantity or other process activity information in the appropriate units, along with the dates and time period during which the process was operating and dates and time periods the process vents are vented to the destruction device. As an alternative to date and time periods when process vents are vented to the destruction device, a facility may track dates and time periods that process vents by-pass the destruction device.
  - g. Calculations used to determine annual emissions of each fluorinated GHG for each process and the total fluorinated GHG emissions for all processes, i.e., total for facility.
5. Destruction efficiency testing. A fluorinated GHG production facility that destroys fluorinated GHGs and reflects this destruction in §98.123 must retain the emissions performance testing reports (including revised reports) for each destruction device. The emissions performance testing report must contain all information and data used to derive the destruction efficiency for each fluorinated GHG whose destruction the facility reflects in §98.123, as well as the key process and device conditions during the test. This information includes the following:
- a. Destruction efficiency (DE) determined for each fluorinated GHG whose destruction the facility reflects in §98.123, in accordance with §98.124(g)(1)(i) through (iv).
  - b. Chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate destruction efficiency for each fluorinated GHG, consistent with requirements in §98.124(g)(1)(i) through (iv), vented to the destruction device.
  - c. Mass flow rate of the stream containing the fluorinated GHG(s) or surrogate into the device during the test.
  - d. Concentration (mass fraction) of each fluorinated GHG or surrogate in the stream flowing into the device during the test.
  - e. Concentration (mass fraction) of each fluorinated GHG or surrogate at the outlet of the destruction device during the test.
  - f. Mass flow rate at the outlet of the destruction device during the test.

- g. Test methods and analytical methods used to determine the mass flow rates and fluorinated GHG (or surrogate) concentrations of the streams flowing into and out of the destruction device during the test.
  - h. Destruction device conditions that are normally monitored for device control, such as temperature, total mass flow rates into the device, and CO or O<sub>2</sub> levels.
  - i. Name of all applicable Federal or State regulations that may apply to the destruction process.
6. Equipment leak records. If subject to §98.123(d), maintain information on the number of each type of equipment; the service of each piece of equipment (gas, light liquid, heavy liquid); the concentration of each fluorinated GHG in the stream; each piece of equipment excluded from monitoring requirement; the time period each piece of equipment was in service, and the emission calculations for each fluorinated GHG for all processes. Depending on which equipment leak monitoring approach followed, maintain information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; and associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation. If site-specific leak detection approach is developed and followed, provide the records for monitoring events and the emissions estimation calculations, as appropriate, consistent with the approach for equipment leak emission estimation in the site's GHG Monitoring Plan.
7. Cylinder heel records. If residual fluorinated GHGs from containers is vented, maintain the following records of the measurements and calculations used to estimate emissions of residual fluorinated GHGs from containers.
- a. If the contents of each container are measured, maintain records of these measurements and the calculations used to estimate emissions of each fluorinated GHG from each container size and type.
  - b. If container heel factors are developed and applied to estimate emissions, maintain records of the measurements and calculations used to develop the heel factor for each fluorinated GHG and each container size and type and of the number of containers of each fluorinated GHG and of each container size and type returned to the facility.
8. Missing data records. Where missing data have been estimated pursuant to §98.125, record the reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data
9. All facilities. Dated records documenting the initial and periodic calibration of all analytical equipment used to determine the concentration of fluorinated GHGs, including but not limited to gas chromatographs, gas chromatography-mass spectrometry (GC/MS), gas chromatograph-electron capture detector (GC/ECD), fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR) devices, and all mass measurement equipment such as weigh scales, flowmeters, and volumetric and density measures used to measure the quantities reported under this subpart, including the industry standards or manufacturer directions used for calibration pursuant to §98.124(e), (f), (g), (m), and (n).

**Requirements that apply to all facilities that are covered under Subpart DD.** All facilities that meet the definition of this source category must retain records of the data reporting requirements reported and listed in §98.306.

**Requirements that apply to all facilities that are covered under Subpart QQ.**

Importers of fluorinated GHGs in pre-charged equipment and closed-cell foams must retain the following records substantiating each of the imports reported:

1. A copy of the bill of lading for the import.
2. The invoice for the import.
3. The U.S. Customs entry form.
4. Ports of entry through which the pre-charged equipment or closed-cell foams passed.
5. Countries from which the pre-charged equipment or closed-cell foams were imported.
6. For importers that report the mass of fluorinated GHGs within closed-cell foams on a CO<sub>2</sub>e basis, correspondence or other documents that show the importer was unable to obtain information on the identity and mass of fluorinated GHG within closed-cell foams from the foam manufacturer.

Exporters of fluorinated GHGs in pre-charged equipment and closed-cell foams must retain the following records substantiating each of the exports reported:

1. A copy of the bill of lading for the export
2. The invoice for the export.
3. Ports of exit through which the pre-charged equipment or closed-cell foams passed.
4. Countries to which the pre-charged equipment or closed-cell foams were exported.
5. For exporters that report the mass of fluorinated GHGs within closed-cell foams on a CO<sub>2</sub>e basis, correspondence or other documents that show the exporter was unable to obtain information on the identity and mass of fluorinated GHG within closed-cell foams from the foam manufacturer.

Persons who transship pre-charged equipment and closed-cell foams containing fluorinated GHGs must maintain records that indicated that the pre-charged equipment or foam originated in a foreign country and was destined for another foreign country and did not enter into commerce in the United States.

**Requirements that apply to all facilities that are covered under Subpart SS.** All facilities that meet the definition of this source category must to keep the following:

1. All information reported and listed in §98.456.
2. Accuracy certifications and calibration records for all scales and monitoring equipment, including the method or manufacturer's specification used for calibration.
3. Copies of certifications to customers of the quantity of gas charged into equipment at the manufacturing facility as well as the actual quantity of gas charged into equipment at installation.
4. Check-out and weigh-in sheets and procedures for cylinders.
5. Residual gas amounts in cylinders sent back to suppliers.

6. Invoices for gas purchases and sales.

*(ii) Respondent Activities*

The owner or operator of a facility that is subject to the rule's reporting requirements must report total annual GHG emissions in metric tons of CO<sub>2</sub>e from all the source categories at the facility.

The primary tasks that reporting program respondents will perform include:

1. Developing appropriate monitoring plans for each affected source and each affected unit at a source, as applicable;
2. Operation and maintenance activities associated with the monitoring, including quality assurance activities;
3. Ensuring data quality, preparing annual reports of emissions data, and submitting these reports to EPA;
4. Potentially responding to questions or error messages from EPA; and
5. Maintaining records for a minimum of three years. In addition, respondents will be required to purchase the necessary monitoring hardware and purchase the electronic data reporting software (or software upgrades) if they had not done so for another reporting program.

Reports will be required to present the annual mass GHG emissions from each source category separately. The calculations used to determine GHG emissions, the frequency at which those calculations are required, the methods used to estimate missing data, and the QA/QC requirements depend on the specific source category.

## **5. THE INFORMATION COLLECTED – AGENCY ACTIVITIES, COLLECTION METHODS, AND INFORMATION MANAGEMENT**

### **5(a) Agency Activities**

The ICR for the Final MRR (EPA ICR No. 2300.03) described EPA Headquarters' activities associated with program start-up activities to prepare for receiving the reported data. These activities include database and software design, developing guidance and training affected sources, responding to stakeholders, and communication and outreach on the rule requirements.

This ICR reflects incremental Agency costs for implementing the program once the requirements for the new subparts are in place. EPA program operation activities will include monitoring and verification of emission reports, database and software maintenance, communication and outreach, and program evaluation.

### **5(b) Collection Methodology and Management**

EPA will establish a central repository of inventory data for all respondents. Respondents will report data electronically, and EPA will store the data in the database. The electronic format,



which will reflect the underlying electronic data reporting system, will be developed prior to the first reporting date. By specifying in the rule text the exact information that will be required to be reported but not specifying the exact reporting format, EPA informs reporters about exactly what information they will be required to report and has flexibility to modify the electronic reporting format and electronic data reporting system in a timely manner based on implementation experience and new technology. EPA has used this approach successfully in existing programs, such as the Acid Rain Program and the Title VI Stratospheric Ozone Protection Program, facilitating the deployment of new reporting formats and reporting systems that take advantage of technologies such as eXtensible Markup Language (XML), and reduce the burden on reporters and the Agency. The electronic reports submitted under this rule are subject to the provisions of 40 CFR Part 3, specifying EPA systems to which electronic submissions will be required to be made and the requirements for valid electronic signatures.

The Designated Representative will be required to use an electronic signature device (e.g., a PIN or password) to submit a report. If the Designated Representative holds an electronic signature device that is currently used for valid electronic signatures accepted under another Agency program, EPA intends to design the new reporting system to also accept valid electronic signatures executed with that device where feasible.

EPA's reporting format for a given reporting year could make use of several ID codes – unique codes for a unit or facility. To ensure proper matching between databases, e.g., EPA-assigned facility ID codes and the ORIS (DOE) ID code, and consistency from one reporting year to the next, we plan for the reporting system to provide each facility with a unique identification code to be specified by the Administrator.

The Agency plans to publish data submitted or collected under this rulemaking through EPA's Web site, reports, and other formats (e.g., XML), with the exception of any CBI data. The data could be used by EPA and other agencies, and other organizations and stakeholders for air modeling, analyzing emissions by industry sector and region, informing future climate change policy decisions, and answering questions from the public. The new system will follow Agency standards for design, security, data element and reporting format conformance, and accessibility. In designing the data base, EPA will attempt to minimize respondents' burden by integrating the new reporting requirements with existing data collection and data management systems, when feasible.

### **5(c) Small Entity Flexibility**

EPA took several steps to minimize the impacts on small entities. Through comprehensive outreach activities prior to proposal of the rule, EPA held approximately 100 meetings and/or conference calls with representatives of the primary audience groups, including numerous trade associations and industries that include small business members. EPA further minimized impacts on small entities by not requiring facilities below a certain emissions threshold to report their emissions. For example, fluorinated gas production facilities (subpart L) and electronics manufacturing facilities (subpart I) are subject to the rule if facility emissions exceed 25,000 metric tons CO<sub>2</sub>e per year in the absence of control technologies, as referenced in 40 CFR 98.2(a)(2).

#### **5(d) Collection Schedule**

Facilities will be required to collect data and calculate emissions at varying frequencies, as described in the rule. Facilities that will be required to comply are required to submit GHG emission reports annually. Importers and exporters of pre-charged equipment or closed-cell foam products containing fluorinated GHGs, N<sub>2</sub>O, or CO<sub>2</sub> (subpart QQ) are required to begin collecting data in 2011 for reporting in 2012, as referenced in the list of suppliers referenced in 40 CFR 98.2(a)(4).

## **6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION**

This section presents EPA's estimates of the burden and costs to respondents associated with the activities described in Section 4 as well as the federal burden hours and costs associated with the activities described in Section 5(a). EPA estimates that, over the three years covered by this request, the total respondent burden associated with this reporting will average 76,701 hours per year and the cost to respondents of the information collection will average \$6,866,343 per year.

Section 6(a) of this ICR provides estimates of burden (hours) for all respondent types. Section 6(b) contains estimates of respondent costs for the information collection. Section 6(c) summarizes federal burden and costs. Section 6(d) describes the respondent universe and the total burden and cost of this collection to respondents. Section 6(e) presents the bottom line burden and cost. The burden statement for this information collection is in Section 6(f).

### **6(a) Estimating Respondent Burden**

Respondent burden estimates are presented in Exhibit 6.1. EPA estimates that the total annual burden to all affected entities is 76,701 hours per year over the three years covered by this information collection. Exhibit 6.1 presents aggregate burden by sector only; for the details of burden calculations, please see Appendix A.

### **6(b) Estimating Respondent Costs**

Costs to respondents associated with this information collection include labor costs (i.e., the cost of labor by facility staff to meet the rule's information collection requirements) and non-labor costs (e.g., the cost of purchasing and installing monitoring equipment or contractor costs associated with providing the required information).

To calculate labor costs, EPA estimated technical, managerial, clerical, and legal loaded labor rates for each industry sector using labor rates from the Bureau of Labor Statistics<sup>[1]</sup> and applying a 60% loading factor<sup>[2]</sup>; these rates vary somewhat by sector. For all subparts, the labor rates are: \$88.79 for electricity managers; \$101.31 for refinery managers, \$71.03 for industrial managers; \$60.84 for electricity engineers/technicians, \$63.89 for Refinery Engineers/Technicians, and \$55.20 for Industrial Engineers/Technicians; \$29.65 for clerical staff, and \$101.00 for legal staff. Non-labor costs (capital and O&M) are presented in Exhibit 6-1 below.

EPA estimates that the total annual cost to all affected non-federal entities is \$6.9 million over the three years covered by this information collection. Exhibit 6.1 presents aggregate costs; for the details of EPA's cost calculations, please see Appendix A.

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<sup>[1]</sup> These rates reflect adjustments of the manufacturing sector's average productivity increase of 3.7% per year for 6 quarters between 2006 Q2 and 2007 Q4, based on the estimate released by the Bureau of Labor Statistics in March 2008.

<sup>[2]</sup> The ICR Handbook (November 2005) recommends using a multiplier of 1.6 to account for benefits and overhead related to government wages; this is considered a conservative estimate (potentially high) for the private sector.

## **Exhibit 6.1 Annual Average Respondent Burden and Cost for the GHG Reporting Rule**

### **6(c) Estimating Agency Burden and Cost**

This section describes the burden and cost to the federal government associated with this information collection. Federal activities under this information collection include EPA Headquarters oversight of the reporting program and required reporting by federally owned GHG generating facilities.

#### *EPA burden and cost*

EPA activities associated with Subparts I, L, DD, QQ, and SS of the mandatory GHG reporting rule include Headquarters oversight and implementation of the reporting program, e.g., monitoring and verification of emission reports, database and software maintenance, communication and outreach, and program evaluation. EPA estimates that Headquarters will devote up to 21 full time equivalents (FTEs), or 4,160 hours to these activities. EPA will incur incremental costs for Subparts I, L, DD, QQ, and SS of approximately \$384 thousand (Agency labor +contractor costs) for database and software design, developing guidance, training, responding to stakeholders, communication and outreach, contractor support and data base maintenance, and for third-party verification activities.

To develop EPA labor costs, EPA estimates the average hourly labor rate for salary and overhead and benefits for Agency staff to be \$50.14. To derive this figure, EPA multiplied the hourly compensation at GS-12, Step 5 on the 2008 GS pay scale (\$31.34) by the standard government benefits multiplication factor of 1.6 to account for overhead and benefits.

*Burden and cost for federal facilities covered by the rule*

Exhibit 6.2 presents the annual burden and cost for federal facilities that will be required to comply with the rule.

**Exhibit 6.2 Annual Agency Burden and Cost**

**6(d) Estimating the Respondent Universe and Total Burden and Costs**

The number of respondents in each sector that will perform the required activities under this proposed information collection is presented in Exhibit 6.1. The required activities depend on whether the facility will be required to report its GHG emissions and on the applicable sector-specific reporting requirements. These activities are described in Section 4(b) of this ICR.

**6(e) Bottom Line Burden Hours and Costs**

The bottom line burden hours and costs are shown in Exhibit 6.3

## Exhibit 6.3 Bottom Line Burden and Cost

### 6(f) Burden Statement

The respondent reporting burden for this collection of information is estimated to average 76,701 hours per year for a three-year period. The average annual burden to EPA for this period is estimated to be 4,160 hours for oversight activities. The annual public reporting and recordkeeping burden for this collection of information is estimated to average 184 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OAR-2008-0508, which is available for online viewing at <http://www.regulations.gov>, or in person viewing at the Air and Radiation docket in the EPA Docket Center (EPA/DC), EPA West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, D.C. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation docket is (202) 566-1742. An electronic version of the public docket is available at <http://www.regulations.gov>. This site can be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. When in the system, select "search," then key in the Docket ID Number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OAR-2008-0508 and OMB Control Number 2060-NEW on any correspondence.