

**Data Metric Dictionary for the State Review Framework**  
**Clean Air Act**  
**Version 1.1**  
**November 6, 2009**

## **Purpose of the Dictionary**

The purpose of this Data Metric Dictionary (the “Dictionary”) is to provide users with additional description and context for each of the data metrics used in the State Review Framework (SRF) reviews of Clean Air Act (CAA) programs. The individual data metrics are organized within the following twelve SRF elements:

1. Data Completeness;
2. Data Accuracy;
3. Timeliness of Data Entry;
4. Completion of Commitments;
5. Inspection Coverage;
6. Quality of Inspection Or Compliance Evaluation Reports;
7. Identification of Alleged Violations;
8. Identification of Significant Noncompliance (SNC) and HPV;
9. Enforcement Actions Promote Return to Compliance;
10. Timely and Appropriate Action;
11. Penalty Calculation Method; and
12. Final Penalty Assessment and Collections.

In addition, Appendix 1 provides a list of acronyms. Appendix 2 provides relevant information sources.

## **Description of the SRF Elements and Component Data Metrics**

**1. Data Completeness.** Data completeness metrics measure the degree to which data required be in EPA’s the national air database, Air Facility System (AFS), has been reported. The required data helps EPA maintain a comprehensive inventory of all operating<sup>1</sup> sources covered by the CAA.

*Metric 1a – Operating facility universe counts for “Major” and Title V sources*

This metric presents the count of operating

- major<sup>2</sup> facilities in AFS (1a1);
- major facilities with a Title V<sup>3</sup> applicability air program code, e.g., a Title V

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<sup>1</sup> *Operating* refers to facilities that are operating, temporarily closed, or seasonally operating.

<sup>2</sup> *Major* refers to facilities for which actual or potential emissions are above the applicable major source threshold. Major source thresholds are 100 tons per year or less, depending on the pollutant toxicity and ambient air quality.

<sup>3</sup> Title V of the 1990 Clean Air Act Amendments requires all major sources and some minor sources of air pollution to obtain an operating permit. A Title V permit grants a source permission to operate. The permit includes all air pollution requirements that apply to the source, including emissions limits and monitoring, record keeping, and reporting requirements.

permit has been issued, an application received and reported in AFS or a facility is known to be subject to Title V even before a permit application has been submitted (1a2).

*Metric 1b – Operating facility universe counts for federally reportable non-major sources*

This metric presents the count of operating

- synthetic minors<sup>4</sup> in AFS (1b1);
- Part 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP) minors<sup>5</sup> in AFS (1b2);
- federally reportable minors<sup>6</sup> in AFS (1b3).

*Metric 1c – Subprogram and subpart universe*

Subprogram and subpart data indicate what National Emissions Standards for Hazardous Air Pollutants (NESHAP), New Source Performance Standards (NSPS), or Maximum Achievable Control Technology (MACT) standards apply to each source. Subpart data were required to be reported with Full Compliance Evaluations (FCE) on or after 10/1/05. Thus, subpart data are expected to have been entered for each source at the time of the first FCE reported after 9/30/2005. Data displayed with this metric will show Subparts applicable to the facility for each Program listed below.

The number of operating sources that are reported to AFS with the following Applicable Air Programs (e.g., sub program)

- NSPS Part 60 (1c1);
- NESHAP Part 61 (1c2);
- MACT Part 63 (1c3).

The percent of operating sources that are reported to AFS with the following Applicable Air Programs and with FCEs conducted on or after 10/1/2005

- NSPS Part 60 (1c4);
- NESHAP Part 61 (1c5);
- MACT Part 63 (1c6).

These metrics compare the sources (i.e., NSPS/NESHAP/MACT sources), the denominator, to those with Subparts reported, the numerator.

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<sup>4</sup> *Synthetic Minor* refers to facilities with permit conditions that limit emissions below major source thresholds.

<sup>5</sup> *Part 61 NESHAP minors* refers to a minor source subject to NESHAP (Part 61). These sources are kept under close scrutiny because the standards are health based, and violation could imperil human health.

<sup>6</sup> For this metric (1b3) only, *federally reportable minors* refers to a

- non-NESHAP minor included in the state/local agency's Compliance Monitoring Strategy (CMS) Plan for the review year;
- non-NESHAP minor but designated as an High Priority Violator (HPV);
- non-NESHAP minor with a formal enforcement action.

*Metric 1d – Compliance monitoring counts*

- The number of operating sources that are reported to AFS with FCEs completed by the State/local (S/L) agency during the Fiscal Year (FY). Sources are only counted once, even if more than one FCE is reported as completed that year for a source (1d1);
- The number of FCEs completed by the State/local agency during the FY that are reported to AFS for all sources, including operating, temporarily closed, under construction, planned to be constructed, permanently closed, and seasonal sources. All FCEs are counted in this metric, even if more than one FCE is reported as completed that year for a particular source (1d2);
- The number of PCEs completed by the State/local agency during the FY that are reported to AFS for all sources. All PCEs are counted in this metric, even if more than one PCE is reported as completed that year for particular sources (1d3).

*Metric 1e – Historical non-compliance counts*

This metric captures all violations as reported to AFS data element called *Compliance Status*. The universe of facilities for which compliance status must be reported includes Major, Synthetic Minor and Part 61 NESHAP Minor facilities, other facilities identified within the Compliance Monitoring Strategy (CMS) Evaluation Plan, any facility with a formal enforcement action, and any facility with an active HPV. The compliance status in AFS is to be updated upon any compliance/noncompliance change.

*Metric 1f – Informal enforcement counts*

This metric counts the number of Notices of Violation (NOVs) issued in the last fiscal year. Included in the metric are

- the total number of informal actions (NOVs) issued in the last fiscal year. This metric can include multiple NOVs at the same source (1f1);
- the total number of sources with an informal enforcement action (NOV) in the last fiscal year. This metric counts each source with an NOV only once (1f2).

*Metric 1g – HPV counts*

This metric tallies new High Priority Violations (HPVs) identified by the State/local agency during the last fiscal year. Included in the metric are

- the number of every individual new HPV (pathway) with a Day Zero in the last FY (1g1);
- the number of sources in new HPV with a Day Zero in the last FY. Each source with a new HPV is counted only once, even if there are multiple new HPVs for that source during the FY (1g2).

*Metric 1h – HPV Day Zero pathways with complete newly required data reporting*

This metric tracks the three newly required data elements related to HPVs: Discovery Date, Violating Pollutants associated with HPVs, and HPV Violation Type Codes.

(Note: These data were required to be reported at the beginning of FY06, and therefore, relate to HPVs reported or had Day Zero dates after 10/01/2005.) The purpose of these three metrics is to measure completeness in reporting of these key components of the HPV Policy which are critical for proper implementation of the Policy, e.g., (1) How and When were HPV violations discovered; (2) What pollutants relate to the HPV violations; and (3) Which HPV Policy criteria were triggered by the violations, e.g., stack test failure, avoided permit for prevention of significant deterioration (PSD) permit, sulfur dioxide (SO<sub>2</sub>) excess emissions determined by continuous emission monitors (CEMs), etc.

This metric presents

- the percent and number of HPVs with a Day Zero after 10/01/05 as well as other HPVs entered after 10/01/05 with Discovery action/date. This date of 10/1/2005 becomes a base period from which the first FCE conducted triggers the MDR for adequate reporting of subparts (1h1);

This information related to HPVs helps track whether an HPV was identified in a timely manner. Day Zero relates to when a violation was discovered; Discovery Date helps to ensure that Day Zero is accurately reported.

- the percent and number of HPVs with a Day Zero or DCRE date after 10/01/05 as well as other HPVs entered after 10/01/05 (e.g., those for FY05 entered after 10/01/05) that do not include violating pollutants with the HPV (1h2);

These violation data are critical to implementing the CAA program and especially the HPV Policy because sources are expected to comply with the permits issued to them and the national/State standards promulgated.

- the percent and number of HPVs with a Day Zero or DCRE date after 10/01/05 as well as other HPVs entered after 10/01/05 (e.g., those for FY05 entered after 10/01/05) that do not include the HPV Violation Type Code with the HPV (1h3).

HPV Violation Type Codes explain the type of violation(s) being considered an HPV.

#### *Metric 1i – Formal enforcement action counts complete*

Formal enforcement actions include both (1) actions considered “addressing actions” for HPVs, and (2) additional formal enforcement actions for addressing non-HPV violations. Formal enforcement action types are listed the [Enforcement & Compliance History Online \(ECHO\) Data Dictionary](#). For State/local agencies these typically include Administrative Orders, State Court Consent Decrees, and State Civil Actions.

For the fiscal year presented, this metric includes

- the total number of formal actions completed (1i1);
- the total number of sources with formal actions completed. Each source with a

formal action is counted only once, even if there are multiple formal actions for that source during a given fiscal year (1i2).

*Metric 1j – Assessed penalties complete*

This metric presents

- the total dollar amount of assessed penalties for sources with a formal action in the last fiscal year. Note that penalties entered with other actions (e.g., informal) will not be included in the total. Also, penalties entered, inappropriately, two times on successive formal enforcement actions (e.g., referral and then on Consent Decree) at the same source for the same violation pathway may be counted twice (1j).

*Metric 1k – Number of major sources missing CMS Policy applicability*

The Compliance Monitoring Strategy (CMS) requires that all major sources be assigned a CMS frequency. This metric captures

- any State/local major source that is not assigned a CMS frequency (1k).

**2. Data Accuracy.** Data accuracy metrics measure the degree to which data required to be in AFS are accurate. For example, metrics in this element can be used to determine if the correct codes are used and if entered dates are correct.

*Metric 2a – Indicator or accurate violation/noncompliance data entry*

This metric compares the number of HPVs during a given fiscal year to the number of major sources listed in AFS, at any time during the fiscal year, as in violation or meeting compliance schedule. All HPVs (as well as other sources with pending enforcement activity) are to be assigned a Compliance Status code that represents the source as either in violation or meeting schedule until all penalties are completely paid and all injunctive relief, supplemental enforcement actions, civil and judicial activity are completed. This count of HPVs unresolved during any part of the fiscal year (i.e., in an “identified” or “addressed” status) represents the numerator in the metric. The denominator, sources in non-compliance, is derived directly from Metric 1e, historical non-compliance counts.

*Metric 2b – Stack test results (e.g. Pass or Fail)*

Stack testing is defined as any standardized procedure of actions using calibrated tools to determine a rate or concentration in order to verify emissions from a source or the accuracy of a monitor or gauge. It does not include visible emission observations, or relative accuracy test audits (RATAs), nor does it include combustible gas audits (CGAs). When a stack tests report is reviewed, the compliance determination made by the State is documented in AFS with a Results Code (PP-PASS, FF-FAIL or 99-Pending). Results Codes must be reported for each Reference Method (RM) stack or performance tests conducted. RM tests conducted often involve a minimum number of test runs (ex: RM5 for particulates requires a

minimum of 3 runs) with one “average” result. Typically, a RM performance test is conducted for only one (1) pollutant at a time with its own Results reported to AFS. Reporting the actual pollutant code for each stack test is optional, but recommended.

For federally-reportable sources, this metric presents

- the percent of stack tests conducted and reviewed without pass/fail Results Code. That is, the number of pending stack tests compared with the number of stack tests reviewed (2b1);
- the number of stack test failures (2b2).

**3. Timeliness of Data Entry.** Timeliness of data entry metrics measure the degree to which the required data are entered in a timely manner.

*Metric 3a – HPV determinations that are identified and reported in a timely manner*

This metric calculates the percentage of HPV Day Zero pathways reported to AFS within the required 60 day time period.

*Metric 3b – Timely (60 day) reporting of Minimum Data Requirements (MDRs) for activities/actions*

For the fiscal year, this metric calculates

- the percentage of compliance monitoring related MDR actions reported in timely manner (3b1);
- the percentage of enforcement related MDR actions reported in timely manner (3b2).

*Metric 3c – Comparison of frozen data set*

A frozen data set will be created annually near the end of each calendar year. This data set represents the data in AFS at a time when the required data entry for the fiscal year should be complete. Data should be entered into AFS within 60 days of the event or occurrence of the data. For a complete fiscal year this date would be December 1<sup>st</sup>. The “official frozen” data will reflect AFS data shortly thereafter or around the second week of December.

The data in the current data set can be compared with the frozen data to assess whether any of the data changed appreciably from that in the frozen data set. Such changes are an indication of the extent to which the data in the national system were timely entered. (Note: The only data which may not be 100% entered by this frozen capture date in December may be the stack test “results”, e.g., Pass/Fail, for stack tests which were conducted after August 1<sup>st</sup>; State/local agencies have 120 days to report results for stack tests.)

**4. Completion of Commitments.** Completion of commitments metrics measure the degree to which all enforcement/compliance commitments in relevant agreements (i.e., Performance Partnership Agreements (PPAs), Performance Partnership Grants (PPGs), categorical grants, Compliance Monitoring Strategy (CMS) plans, authorization agreements, etc.) are met and any products or projects are completed.

There are no data metrics for Element 4.

**5. Inspection Coverage.** Inspection coverage metrics measure the degree to which states have completed the universe of planned inspections/evaluations, addressing core requirements and federal, state and regional priorities. These metrics consider (1) operating sources, and (2) non-operating sources that have received an appropriate evaluation during the period of interest.

Presented are:

- the percent of CMS major sources receiving FCEs by the state in the most recently completed 2-year CMS cycle (5a1);
- the percent of operating major sources receiving FCEs by the state in the last 2 fiscal years (5a2);
- the percent of all CMS synthetic minor-80 sources with FCEs by the state during the most current 5-year CMS cycle (5b1);
- the percent of operating synthetic minor-80 sources receiving FCEs by the state in the last 5 fiscal years (5b2);
- the percent of all synthetic minor sources receiving FCEs/PCEs by the state in the last 5 fiscal years (5c);
- the percent of all minor sources receiving FCEs/PCEs by the state in the last 5 fiscal years (5d);
- the number of major and synthetic minor-80 sources with “Unknown”<sup>7</sup> compliance status with respect to CMS requirements (5e);
- the number of investigations conducted at federally reportable stationary sources (5f);
- the percent of self certifications received by the State in a given fiscal year for all active majors (5g).

**6. Quality of Inspection or Compliance Evaluation Reports.** This data element measures the degree to which inspection or compliance evaluation reports properly document observations, are completed in a timely manner, and include accurate description of observations.

There are no data metrics for Element 6.

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<sup>7</sup> When a state exceeds or goes beyond the negotiated monitoring frequency, the facility is placed into *Unknown* compliance status in AFS until the FCE has been conducted.

**7. Identification of Alleged Violations.** This data element measures the degree to which compliance determinations are accurately made and promptly reported in the national database upon compliance monitoring report observations and other compliance monitoring.

There are no data metrics 7a and 7b for Element 7.

*Metric 7c – Violations reported to AFS*

The purpose of this metric is to measure the violation or compliance status reporting by States/locals identified by their compliance determinations in various activities, e.g., FCEs, PCEs, stack test reviews, source self-monitoring report reviews, etc. EPA may authorize dual implementation, e.g., both State/local and Federal, of many Federal CAA programs (e.g., State Implementation Plan (SIP), New Source Review (NSR)/PSD, Title V, etc.) or delegate specific federal standards (e.g., NSPS, NESHAP, MACT) in accordance with the CAA Parts 51, 60, 61, 62, 63 or 70. All levels of government agencies are required by the CAA to coordinate regarding violations identified and taking of appropriate enforcement including informal and formal enforcement (i.e., 40CFR51.234, Subpart Q and HPV Policy section 1.D). For example, the CAA requires EPA to notify State/local agencies of pending enforcement actions and share informal/formal enforcement action documents.

This metric presents

- the percent of federally reportable sources with noncompliance (NC) status. That is, the number of federally reportable sources with NC status out of the number of federally reportable sources receiving a state FCE, informal or formal enforcement action in same FY or are in NC status (7c1);

The purpose of this sub metric is to measure the violation or compliance status reporting by States/locals identified by their compliance determinations in various activities, e.g., FCEs, PCEs if violation reported, stack test reviews, source self-monitoring report reviews, as well as by their enforcement actions, etc.

- the percent of all facilities with a failed stack test and with a NC status (7c2).

This metric seeks to confirm that violations, e.g., AFS Compliance Status, matches where stack tests were conducted during a given fiscal year and “Results Codes” show a stack test “failure”.

**8. Identification of Significant Noncompliance (SNC) and HPV.** This data element measures the degree to which the state accurately identifies significant noncompliance/high priority violations and enters information in the national system in a timely manner.

The metrics in this Element measure reporting of HPVs. EPA requires that all federally enforceable violations be appropriately and timely addressed by authorized



or delegated agencies. In the CAA program, EPA maintains a dual authority to enforce against all violations whether those violations were identified by State/local agencies or by EPA itself. However, the State/local agencies and EPA must prioritize the limited resources available to them to take timely enforcement and/or coordinate which agency has the most appropriate enforcement resources to take the lead on a particular case. Therefore, the CAA HPV Policy has set criteria which designate certain significant violations as High Priority Violations. These designated violations then receive highest priority to perform the following activities:

- Designate violation as an HPV
- Report HPVs to AFS
- Coordinate between State/EPA appropriate lead agency responsibility for enforcement
- Conduct routine joint dialogue on case status
- Address violations with appropriate enforcement
- Address violations in a timely manner (e.g., 270 days from designation)
- Resolve violations and report appropriate information to national database

*Metric 8a – High priority violation discovery rate (per source universe, i.e., majors)*

This metric presents the ratio of new HPVs that are identified by the State/local agencies to the number of major sources for the fiscal year of interest. Major sources are defined as *operating major* or any other operating status if the facility was designated an HPV.

*Metric 8b – High priority violation discovery rate (per source universe, i.e., synthetic minors)*

This metric presents the ratio of new HPVs that are identified by the State/local agencies to the number of synthetic minor (SM) sources for the fiscal year of interest. All SMs, not just SM80 sources, are included. Included are operating SMs and non-operating SMs if designated an HPV.

*Metric 8c and 8d – HPV reporting indicator at majors (formal and informal enforcement actions, respectively)*

The reporting of HPVs into AFS in accordance with the HPV Policy and data requirements is a manual process and not automatically nor directly linked within AFS. Therefore, S/L and EPA can benefit from an analysis of certain MDR reportable actions to aid in quality assuring the HPV identification, designation and reporting process. These metrics help identify “potential HPVs” for dialogue purposes are formal enforcement and informal enforcement.

The denominator of this percentage or rate metric uses all majors which have received a formal enforcement action (for 8c) or informal enforcement action (for 8d) in the FY of interest. The numerator identifies those facilities in the denominator universe which also received designation as an HPV.

*Metric 8e – HPV reporting indicator at majors or synthetic minors with failed stack tests*

This metric computes the percentage of failed stack test actions at major/SM sources during the previous 24-month period that received an HPV listing.

This metric assumes that a high percentage of failed stack tests, which are observed or reviewed, at majors and synthetic minors (SMs) will potentially meet the HPV criteria and therefore should be reported as HPVs. This assumption is based on data analysis, and the fact that permit authorities and enforcement managers will generally not require stack tests, which are expensive to conduct and require significant resources by agencies to observe and/or review, unless there is a major potential to emit pollutant involved.

**9. Enforcement Actions Promote Return to Compliance.** This data element measures the degree to which state enforcement actions include required corrective action (i.e., injunctive relief or other complying actions) that will return the facilities to compliance in a specified time frame.

There are no data metrics for Element 9.

**10. Timely and Appropriate Action.** This data element measures the degree to which a state takes timely and appropriate enforcement actions in accordance with policy relating to specific media.

*Metric 10a – Percent of HPV cases which do not meet timely or appropriate goals of the HPV Policy*

This metric compares the number of State/local HPV cases that did not meet timely or appropriate goals (timeliness, penalty or return to compliance) of the HPV Policy over 2 fiscal years and compares to total State/local lead HPV pathways in same period.

**11. Penalty Calculation Method.** This data element measures the degree to which state documents in its files that initial penalty calculation includes both gravity and economic benefit calculations consistent with national policy.

There are no data metrics for Element 11, however, the EPA file reviewers do check for the accurate reporting of certain MDR data to ensure proper reporting into AFS.

**12. Final Penalty Assessment and Collections.** This data element measures the degree to which differences between initial and final penalties are documented in the file along with a demonstration in the file that the final penalty was collected.

*Metric 12a – No activity indicator – penalties*

This metric presents sources where no penalties were assessed by the state during the given fiscal year.

The purpose of this metric is to identify those State/local formal actions issued in the fiscal year which had some amount of penalty “assessed”. This metric counts formal actions reported with assessed penalties. It is neutral to a state’s size of source universe or enforcement activities, especially if the state is relatively small.

*Metric 12b – Penalties normally included with formal enforcement actions at HPVs.*

This metric presents the percent of enforcement actions taken at HPVs that carry a penalty. The purpose of this metric is to identify those formal enforcement actions which address HPVs as a percentage of those with penalties versus the total number of HPVs addressed. This metric provides a key measure of the general intent of the HPV Policy.

## Appendix 1: List of Acronyms

<b>ACC</b>	<b>Annual Compliance Certification for Title V permitted facilities</b>
<b>AFS</b>	Air Facility System
<b>CAA</b>	Clean Air Act
<b>CEM</b>	continuous emission monitors
<b>CFR</b>	Code of Federal Regulations
<b>CGA</b>	Combustible Gas Audits
<b>CMS</b>	Compliance Monitoring Strategy (When the reference is to the National CMS, the reference is to third reference bullet, above.)
<b>DCRE</b>	<b>Date Created in AFS (e.g., an action added to AFS such as an FCE)</b>
<b>DZ</b>	Day Zero
<b>ECHO</b>	Enforcement & Compliance History Online
<b>FCE</b>	Full Compliance Evaluation
<b>FY</b>	Fiscal Year (The federal FY is October 1 through September 30)
<b>FRV</b>	Federally-Reportable Violations
<b>HPV</b>	High Priority Violation(s)
<b>ICR</b>	Information Collection Request
<b>MACT</b>	Maximum Achievable Control Technology
<b>MDR</b>	Minimum Data Requirements
<b>NESHAP</b>	National Emissions Standards for Hazardous Air Pollutants
<b>NOV</b>	Notices of Violation
<b>NSPS</b>	New Source Performance Standards
<b>NSR</b>	New Source Review
<b>PCE</b>	Partial Compliance Evaluation
<b>PSD</b>	prevention of significant deterioration
<b>RATA</b>	Relative Accuracy Test Audits
<b>RM</b>	Reference Method
<b>SIP</b>	State Implementation Plan
<b>SM</b>	Synthetic Minor
<b>SNC</b>	Significant Noncompliance
<b>SO<sub>2</sub></b>	Sulfur dioxide
<b>SRF</b>	State Review Framework

## Appendix 2: Information Sources

The following information sources are referenced in the metrics discussions above.

1. Minimum Data Requirements as promulgated in an Information Collection Request, July 2005; unless superseded usually every three (3) years
2. High Priority Violation Policy, December 22, 1998
3. Compliance Monitoring Strategy Guidance, 2001
4. National Stack Testing Guidance, 2005
5. Federally Reportable Violation Guidance, 1986 (Note: See FRV Clarification memo when issued in early FY09)
6. The Code of Federal Regulations including
  - a. 40CFR51: Sections 51.324(a) and (b) as well as 51.327 regarding general compliance and enforcement CAA program implementation requirements
  - b. 40CFR51.212 regarding testing, inspection and enforcement requirements implemented through individually approved State Implementation Plans located in 40CFR52
  - c. 40CFR70.4(j)(1) regarding Title V permit reporting information on major sources
  - d. 40CFR70.10(c)(1)(iii) regarding reporting to EPA for adequate program oversight purposes
  - e. 40CFR60; 61; 63 regarding delegation and reporting by states/locals for NSPS, NESHAP and MACT regulation program implementation