COMMONWEALTH of VIRGINIA

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MEMORANDUM

TO: Regional Directors
Regional Air Compliance Managers
Regional Air Permit Managers
Regional Enforcement Managers
Central Office Air Managers

CC: Jeffery A. Steers, Director of Central Operations

FROM: Michael G. Dowd, Director, Air and Renewable Energy Division MGD

SUBJECT: ASOP-10: Air Standard Operating Procedure for Reviewing Excess Emission Reports (EERs)

DATE: Revised 8-17-2018 (Originally issued 11-14-2002)

Purpose:

The purpose of this procedure is to provide clarification and promote consistency regarding the review of EERs. Acceptable reporting elements are detailed within this procedure, and sample checklists and report formats are attached as appendices to assist DEQ staff in ensuring all required information is submitted.

This procedure supersedes the previous version originally issued on November 14, 2002. Questions or comments concerning this procedure should be directed to DEQ's Office of Air Compliance Coordination.

Applicability:

This procedure applies to the review of EERs submitted by facilities for Continuous Emission Monitoring Systems (CEMS), Continuous Opacity Monitoring Systems (COMS), Continuous Parametric Monitoring Systems (CPMS), and Predictive Emission Monitoring Systems (PEMS).

EER requirements vary based on the applicable regulations or permit requirements, therefore, the specific EER requirements for each facility must be determined to ensure completeness of the submittal. The terms used in this guidance are defined in 40 CFR 60, 40 CFR 63, and 40 CFR 75.

Background:

TYPES OF MONITORS

1. **Direct Compliance Monitors:** Monitoring systems that are used as the continuous compliance determination method specified by a regulation or permit are considered direct compliance monitors. Direct compliance monitors fall into two basic categories:

   A. Direct Measurement Monitors:

   CEMS directly measure specific pollutants to demonstrate compliance with an emission standard or destruction efficiency requirement. Based on the applicable regulation, the monitors, (both inlet and outlet, where applicable), must be certified in accordance with 40 CFR 60, Appendix B[1], or 40 CFR 75, Appendix A[2], or the applicable Subpart in 40 CFR 63[3]. Quality assurance must be conducted on the monitors in accordance with Pt. 60, Appendix F or Pt. 75, Appendix B or the applicable Subpart in 40 CFR 63. Examples of direct measurement monitors include, but are not limited to:

   - NO_x monitors (and associated diluent monitor)
   - SO_2 monitors
   - Hg monitors or sorbent trap systems
   - VOC monitors
   - PM monitors

   COMS directly measure opacity emissions to demonstrate compliance with an opacity limit if they are required by an NSPS, MACT, or other federal program (e.g., Acid Rain, Cross State Air Pollution Rule [CSAPR], NO_x Trading Program, etc.). The federally required COMS must meet the requirements of Performance Specification 1 (PS-1) and Procedure 3, as outlined in 40 CFR 60, Appendices B and F, respectively. Existing or state-only required COMS are direct compliance monitors if they are maintained in accordance with 40 CFR 60, App. F, Procedure 3 or 9VAC5-40-41 B 2 c [4]. If the COMS is not maintained in accordance with either of the aforementioned requirements, the compliance status of the facility (with respect to COM quality assurance requirements) must

[1] http://www.ecfr.gov/cgi-bin/text-idx?SID=7ac6bae99bebcffea7827a4e70dcd1f7&mc=true&node=pt40.9.60&rgn=div5#ap40.9.60.b

[2] http://www.ecfr.gov/cgi-bin/text-idx?SID=cb7469cc96be3eb26058a4bdae02b161&mc=true&node=ap40.17.75_175.a&rgn=div9

[3] http://www.ecfr.gov/cgi-bin/text-idx?SID=2e98568064d1658558a1d4f47ec80929&mc=true&node=ap40.15.63_110042.a&rgn=div9

[4] https://law.lis.virginia.gov/admincode/title9/agency5/chapter40/section41/

be evaluated and corrective action taken, if warranted. Data collected by non-quality assured opacity monitors may be used as credible evidence of non-compliance.

B. <u>Indirect Measurement Monitors</u>:

CPMS monitor a surrogate operating parameter that is correlated to an emission rate based upon information gathered from a performance test. Although the actual emissions are not directly monitored, some regulations specifically state that any excursion of the acceptable operating parameter is an exceedance of the standard (e.g., 40 CFR 60, Subpart GG, §60.334(j)(1)(I)(i)(A)[5], 40 CFR 60, Subpart KKKK, §60.4380(a)(1)[6], and 40 CFR 63, Subpart N, §63.343(c)[7]). In such instances, the CPMS is considered a direct compliance monitor. Examples of CPMS include, but are not limited to:

- Water or steam flow meter in conjunction with a fuel flow meter
  - Used to generate a water (or steam) to fuel ratio
  - Required by 40 CFR 60, Subpart GG[8]

- Pressure gauges that measure pressure drop across a scrubber or mist eliminator
  - Required by 40 CFR 63, Subpart N

CPMS may not have specific quality assurance procedures, and therefore, the data may not provide the same accuracy or integrity as direct measurement monitors.

PEMS include the total equipment necessary to determine the pollutant concentration or emission rate using process or control device operating parameter measurements, in conjunction with a conversion equation, graph, or computer program to produce results in units of the applicable emission limitation or standard. PEMS provide a reasonable alternative to CEMS where there is a reliable and predictable correlation between plant operating conditions and emissions (e.g., boilers, turbines, and some complex processes). Generally, PEMS are required to be certified and maintained in accordance with 40 CFR 60, Appendices B and F.

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[5] http://www.ecfr.gov/cgi-bin/text-idx?SID=b4511d3d7912b856d05886ee430d2192&mc=true&node=se40.7.60_1334&rgn=div8
[6] http://www.ecfr.gov/cgi-bin/text-idx?SID=b4511d3d7912b856d05886ee430d2192&mc=true&node=se40.8.60_14380&rgn=div8
[7] http://www.ecfr.gov/cgi-bin/text-idx?SID=b4511d3d7912b856d05886ee430d2192&mc=true&node=se40.11.63_1343&rgn=div8
[8] see ACG-006 for additional EER requirements for Subpart GG sources that utilize water or steam injection for NOx control

An example of a PEMS is:

- Data from fuel flow, exhaust gas temperature, and combustion temperature monitors used to calculate NO_x and SO_2 emissions from a boiler.

2. **Indirect Compliance Monitors**: These monitoring systems are used to demonstrate continuing compliance with an emission limit by relating actual operating parameters to those collected during a performance test (which demonstrated compliance with an emission limit). Unless specified in a regulation or permit (e.g., NSPS Subpart TT), EERs for indirect compliance monitors are typically not required; however, the submittal of a monitoring system report may be required under other regulatory programs, such as the Title V Compliance Assurance Monitoring (CAM) Report or the Semi-annual Monitoring Report (SAMR).

   Examples of indirect compliance monitors include, but are not limited to:

   - Pressure drop across a scrubber, baghouse, or mist eliminator
   - Incinerator combustion temperature
   - Production or process rate
   - Fuel input
   - Scrubber liquid flow rate

   Excursions of acceptable operating parameters may indicate potential non-compliance with the emission limit. Compliance with the emission limit is generally demonstrated by a performance test. Information gathered by indirect compliance monitors can be used for identifying possible O&M deficiencies and as credible evidence of non-compliance.

Implementation:

The following steps are necessary for inspectors to properly review EERs:

1. RESEARCH

Research the source's permits and the applicable regulations to determine the specific reporting requirements for the facility. The applicable regulations are specified in the facility's permit or associated engineering analysis; however, there may be instances when an applicable regulation is promulgated after the issuance of the permit. Regional air permitting staff or the Office of Air Permit Programs should be contacted if regulatory applicability cannot be determined.

The reviewer must have a thorough understanding of:

- The type of source (e.g., boiler, turbine, printer, chemical manufacturing).
- The type of control equipment used (e.g., ammonia injection, low NOx burners, SNCR, scrubber).
- The underlying regulatory requirement for the monitor. For example, a coal-fired electrical generating unit may be required to install a:
  - COM (per federal or state regulations).
  - SO2 monitor (per a NSPS or MACT).
  - NOx monitor (per NSPS, Acid Rain Program, or CSAPR).
- The emissions monitored and applicable emission standards.
- The data the source is required to collect.
- The monitoring system and how it operates, including:
  - The type of monitor (in situ, extractive, dilution)
  - The basic operating principles of the monitor and associated probe system
  - The range of the monitor (single or dual range)
  - The equation used to convert ppm reading to unit of the standard
  - Note any unusual operating configuration. For example, a single monitor may record data for emissions from three different boilers that exhaust into one common stack.

2. INITIALLY SCREEN THE REPORT

Use the checklist in Attachment A to initially screen the EER. The checklist may be modified to address additional requirements, based upon the applicable regulation or permit. Ensure each of the required pieces of information (identified on the checklist) were included in the submittal. Separate summary pages (see Appendices B-E) must be submitted for each pollutant monitored, including the associated diluent monitor, when applicable (e.g., an O_2 monitor associated with a NO_x monitor). Depending on the type of audit conducted during the reporting period, the audit results may be received separately from the EER.

If the EER (or audit result) is late, save the means of submission (i.e., envelope, e-mail, date stamped cover letter, etc.) to document that the source failed to comply with the timeliness requirement.

3. REVIEW THE MONITORING SYSTEM SUMMARY DATA PAGES

Attachment B of this document is the preferred summary data page regarding monitor performance and excess emissions. For consistency purposes and ease of EER review, its use should be encouraged for facilities not currently using the form. Emissions must be reported in the units of the standard identified in the permit (e.g., ppm value corrected to percent O_2, lb/mmbtu, etc.).

A. Monitoring System Performance:

1) Confirm the causes of monitor downtime listed on the Monitoring System Summary Data page are corroborated in the supporting documentation, (typically found as an appendix of the EER). The supporting document is generally referred to as the "Summary of Monitoring System Downtime", or similar title (see Appendix C). The supporting documentation must include the following information for each separate incident:

   - Start and stop time
   - Duration
   - Affected monitor
   - Reason for down time
   - Corrective action taken

2) Ensure the hours of each category of monitor downtime listed on the Monitoring System Summary Data page coincide with those listed in the Summary of Monitor Downtime. Unless specific unit operating information is included in the EER, assume that all reported monitor downtime occurred during periods of source operation. If operating information is included, only count the downtime when the unit was in operation. If the monitored unit has limited operating time, (e.g., peaking units), encourage the facility to include operating data in the EER to corroborate the duration of the monitor downtime.

3) If any discrepancies are identified, clarify and document the cause of the discrepancy with the facility. Any corrected documentation submitted by the facility must be attached to the original submission.

4) If the applicable regulation or permit requires the EER to include the daily calibration results, review the results to ensure all out-of-control periods are correctly identified on the Monitoring System Summary Data page. Calibration performance specifications and definitions of out-of-control periods can be found in the quality assurance Appendix of the applicable regulation identified during the research phase of the EER review (e.g., 40 CFR 60, Appendix F, or 40 CFR 75, Appendix B). If the daily calibration results are not included in the EER, they should be reviewed during the on-site inspection to ensure all out-of-control periods are correctly identified in the EER submittals.

5) Ensure the total source operating time for the unit is stated on the Monitoring System Summary Data page

6) Confirm the monitor percent unavailable calculation is correct and the categories are correctly summed

   - % unavailable = (monitor downtime / unit operating time) x 100

7) Convert the monitor percent unavailable to monitor percent available
   - Total monitor % available = 100% - % monitor unavailable

B. <u>Excess Emissions</u>:

1) Confirm the causes of the excess emissions listed on the Monitoring System Summary Data page are corroborated in the supporting documentation, (which is typically found as an appendix of the EER). The supporting document is generally referred to as the "Summary of Excess Emissions", or similar title (an example can be found in Appendix E). The supporting documentation must include the following information for each separate incident:

   - Start and end time
   - Duration
   - Average reading (in unit of the standard)
   - Reason for the excess emission
   - Corrective action taken

2) Ensure the duration of each excess emission category listed on the Monitoring System Summary page coincides with those listed in the CEM Excess Emission Report. If any discrepancies are identified, clarify and document the cause of the discrepancy with the facility. Any corrected documentation submitted by the facility must be attached to the original submission.

3) Confirm the Total Monitored Operating Time is correct

   - Total Monitored Operating Time = Total source operating time – Monitor downtime

4) Confirm the Percent of Monitored Operating Time calculation is correct for each category of excess emissions

   - Percent of Monitored Operating Time = (Total duration of excess emission/Total source monitored operating time) x 100

5) Confirm the percent of Monitored Operating Time categories are correctly summed

4. EVALUATE THE SUBMITTED DATA

A. Monitor Performance:

1) Determine whether the percent monitor downtime is compliant with the minimum availability requirement, when applicable. There are a limited number of regulations that specify a percent availability requirement; therefore, the applicable regulations identified during the research phase of the EER review must be reviewed to determine if a monitor availability requirement applies. Some permits may also stipulate a minimum percent availability requirement.

2) If a specific monitor availability requirement does not apply, compliance with 9VAC5-40-20 E[9] (for existing sources) or 9VAC5-50-20 E[10] (for new or modified sources) must be evaluated to determine the effectiveness of the O+M program.

3) When evaluating percent downtime, special consideration should be given if the unit only operated for a limited amount of hours during the quarter. Low operating hours will artificially give the appearance of excessive downtime. For example, if a "peaking" unit at a power generation facility only operates 100 hours during the reporting period and the monitors are unavailable to collect data for 14 hours, the resulting percent unavailability is 14%. However, the cause of the downtime may have been properly addressed and not indicative of poor operation and maintenance procedures. This information should be taken into consideration when determining if follow-up enforcement is warranted.

4) Review the audit results in accordance with ASOP-4. Ensure the audit was conducted within the timeframe prescribed in the applicable regulation. If an audit was not conducted due to the range of the analyzer, or the quarter was not a QA operating quarter, or if the grace period clause was utilized (per 40 CFR 75, Appendix B, Section 2.2), a statement indicating such must be included.

B. Excess Emissions:

1) Determine if the applicable state or federal regulation specifically exempts excess emissions during start-up, shutdown, or malfunction. With the exception of opacity, Virginia regulations do not provide an exemption for start-up and shutdown. The amendment to 9VAC5-20-180 G, (effective 6/1/2016), removed the affirmative defense clause for malfunctions from the

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[9] https://law.lis.virginia.gov/admincode/title9/agency5/chapter40/section20/
[10] https://law.lis.virginia.gov/admincode/title9/agency5/chapter50/section20/

regulation. Consequently, pollutant excess emissions (other than opacity) due to malfunctions are no longer exempt when the limit was established by a DEQ permit action (although there may be rare exceptions to this rule, based on the reasoning behind a specific permit limit). The SSM opacity exemptions provided by 9VAC5-40-20 A 4 and 9VAC5-50-20 A 4 remain in effect. If an exemption is not specifically provided, then technically, compliance with the emission limit is required for 100 percent of the total source operating time.

2) Exempt periods are tracked to determine if the facility is compliant with the requirements outlined in 9VAC5-40-20 E or 9VAC5-50-20 E; however, they are excluded when evaluating excess emissions for compliance purposes.

3) Determine if all malfunctions (>1 hour in duration and not categorized as an exempt period) identified in the EER were reported in accordance with 9VAC5-20-180[11]. Evaluate if the corrective action taken to address the cause of the malfunction was conducted in a timely and effective manner.

4) Determine the magnitude of each excess emission event to determine the appropriate level of enforcement needed to address the excess emission.

5) Review the cause of each excess emission event and evaluate if the cause is indicative of a repetitive problem that is not being adequately addressed.

6) Determine whether the percent compliance meets the minimum percent compliance requirement, where applicable.

   - There are a limited number of regulations that specify a minimum compliance requirement; therefore, the applicable regulations identified during the research phase of the EER review must be reviewed to determine if a minimum percent compliance requirement applies. Some permits may stipulate a minimum percent compliance requirement.
   - If there is not an applicable percent compliance requirement, evaluate if the reported percent compliance is acceptable based upon the specific excess emission events, corrective actions taken, and the compliance history of the facility.

7) When evaluating percent compliance, special consideration should be given if the unit only operated for a limited amount of hours during the quarter. Low operating hours will artificially give the appearance of excessive non-compliance. For example, if a "peaking" unit at a power plant has 100 hours of total source monitored operating time during the reporting period, and the unit has 10 hours of excess emissions (typically due to startup/shutdown), the resulting percent compliance is 90. However, the excess emissions may

[11] https://law.lis.virginia.gov/admincode/title9/agency5/chapter20/section180/

have been properly addressed and not indicative of poor operation and/or maintenance procedures.

8) Forward questions regarding compliance determinations to the Office of Air Compliance Coordination if they cannot be determined at the regional level.

5. MAKE A COMPLIANCE DETERMINATION

Based on the results of the EER review, make a compliance determination as follows:

- **In Compliance**: The source is considered to be in compliance if the EER demonstrates all of the following:
    - Sufficient information was provided to determine compliance and was presented in an acceptable format,
    - Submission deadline was met,
    - Quarterly audit was conducted on time and met the applicable performance specification, and
    - Monitor availability and excess emissions percentages were determined to be acceptable.

- **Out of Compliance**: The source is considered to be out of compliance if any of the above criteria are not met.

6. GENERATE AN INSPECTION REPORT IN CEDS

Generate a "Review EER or Other CEM Report" in CEDS within 30 days of receipt of the EER. The inspection report must include all the required fields identified in CEDS. If non-compliance issues have been identified but it has been determined that an enforcement action is not warranted (based on information provided in the EER), the CEDS report may be placed into "in compliance" status. All non-compliance related issues and related enforcement determinations must be clearly detailed in the CEDS report. A copy of an inspection report that identifies non-compliance must be sent to the facility. An inspection report that indicates compliance may be sent to the facility upon request.

7. DETERMINE THE APPROPRIATE COMPLIANCE RESPONSE, if applicable

The degree of compliance response should be commensurate to the significance of the downtime or exceedance.

A. Identify which of the following five principle categories relate to the deficiency identified during the EER review:

- **Emission Standard Violation** – occurs whenever a pollutant emission rate, (averaged over a specified time period), is documented by a direct compliance monitoring system to be in excess of an emission standard.

- **Percentage Reduction Violation** – occurs whenever the monitoring system measures the efficiency of a control device (percent reduction of the emissions of a specified pollutant) to be less than the minimum requirement outlined in the applicable regulation, permit, or Consent Order.

- **Data Capture Violation** – occurs whenever a monitoring system is documented to have not collected data for the minimum percent availability required by the applicable regulation, permit, or Consent Order.

- **Operation and Maintenance (O&M) Violation** – refers to a failure to demonstrate acceptable operating and maintenance practices of the process or control equipment, and/or the CEM system as required by 9VAC5-40-20 E or 9VAC5-50-20 E.

- **Procedural and Reporting Violations** – encompasses a wide variety of deficiencies associated with the installation, certification, quality assurance, recordkeeping and/or reporting requirements specified by the applicable regulation, permit, or Consent Order.

B. Determine if the violation is a High Priority Violation (HPV) based on the criteria outlined in EPA's HPV policy[12] and Air Compliance Guidance (ACG) – 005[13]. Direct questions regarding the EPA HPV policy or associated criteria to the Office of Air Compliance Coordination.

C. Determine what type of enforcement action is appropriate. Generally, the lowest level of enforcement needed to achieve compliance is appropriate, which may be increased if non-compliance persists. However, all enforcement actions must be initiated on a case-by-case basis.

- A Request for Corrective Action (RCA) is typical for deficiencies that can be resolved within 30 days. The following is a non-exhaustive list when an RCA may be appropriate:

    - EER submitted less than 30 days late,
    - Repeatedly incomplete submittals,

[12] https://www.epa.gov/enforcement/revised-timely-and-appropriate-t-and-enforcement-response-high-priority-violations-hpvs
[13] http://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=6006

- Monitoring system downtime was ≥ 3%, but ≤ 5%, of the total source operating time during the reporting period, or
- Non-exempt excess emissions were ≥ 3%, but ≤ 5%, of the total source monitored time during the reporting period.

[**Note:** The above examples apply in the absence of a percent availability or percent compliance requirement outlined in the facility's permit, when applicable.]

- A Warning Letter (WL) is typical for deficiencies that can be resolved within 30 - 90 days or are generally more serious in nature. The following non-exhaustive list provides examples when a WL may be appropriate:

  - EER submitted more than 30 days late,
  - Repeatedly late submittals,
  - Monitoring system downtime was >5%, but ≤10% of the total source operating time during the reporting period or <95% of the total source operating time on a 4-quarter rolling basis,
  - Non-exempt excess emissions were >5%, but ≤10% of the total source monitored time during the reporting period, or
  - Non-exempt excess emissions were substantial in terms of magnitude.

  [**Note:** The above examples apply in the absence of a percent availability or percent compliance requirement outlined in the facility's permit, when applicable.]

- A NOV may be appropriate if:
  - The duration of the excess emission is ≥168 hours during the calendar quarter (thereby triggering HPV status and initiating the associated timelines detailed in EPA's HPV policy),
  - The monitor availability results in the facility's inability to demonstrate compliance on an acceptable basis, (i.e., <90% of the total source operating time on a quarterly basis,
  - The monitor downtime is due to unaddressed repetitive issues or significant operator error,
  - Non-exempt excess emissions are >10% of the total source monitored time during the reporting period, or
  - The duration of the non-exempt excess emissions are <168 hours in a calendar quarter, but are substantial in terms of magnitude.

This procedure supersedes the previous version originally issued on November 14, 2002. Questions or comments concerning this procedure should be directed to DEQ's Office of Air Compliance Coordination.

ATTACHMENT A:

EER REVIEW CHECKLIST

Reporting Period: _____ Year: _____

Reviewer: _____ Date of Review: _____

Company: _____ Reg #: _____

Timeliness (Must be postmarked within 30 days of quarter)

Date Postmarked _____ Days Late: _____

NOTE: For EERs which cover multiple monitors, specify monitor when noting problem.

Monitoring System Performance Information	**No Problem**	**Problem/Comments**
(a) Affirmative Statement of No Period of Downtime, Repair or Adjustment (include no CEMS modification)		
b) Date and Time Identifying Specific Periods During Which Monitoring System was Inoperative		
(c) Nature of System Repairs or Adjustments		
Excess Emissions Information	**No Problem**	**Problem/Comments**
(a) Affirmative Statement of no EEs		
(b) Data Reported in Units of Applicable Standard		
(c) Date and Time of Commencement		
(d) Date and Time of Completion		
(e) Magnitude		
(f) Conversion Factors Used		
(g) Identification of EEs Caused by Start-up, Shutdown, or Malfunction		
(h) Nature and Cause of Malfunction		
(i) Malfunction Corrective Action or Preventive Measures		
(j) Audit Dates & Results Reported		

ATTACHMENT B:

MONITORING SYSTEM SUMMARY DATA

(Use Separate Forms for Each Monitor)

Type of Pollutant: _____

A. Monitoring System Performance (Includes Aggregate Downtime for Pollutant and Diluent Monitors)

Cause of Monitor Downtime	Total Downtime (hours)	% Unavailable	Comments
(a) Monitor Equipment Malfunctions			
(b) Non-monitor Equipment Malfunctions (e.g., computer, data recorder, etc.)			
(c) Calibration/QA			
(d) Other Known Causes			
(e) Unknown Causes			
(f) Total			

Total Source Operating Time During Quarter: _____

[Time in Quarter (hours) - Source Downtime (hours) = Source Operating Time (hours)]

Percent Unavailability = Monitor Downtime (hours) / Source Operating Time (hours) x 100

B. Emissions Performance

Cause of Excess Emissions	Total Duration of EE's (hours)	Percent of Monitored Operating Time	Comments
(a) Start-up/Shutdown			
(b) Control Equipment Problems			
(c) Process Problems			
(d) Fuel Problems			
(e) Other Known Problems			
(f) Unknown Causes			
(g) Total			

Total Monitored Operating Time = Total unit operating time – Monitor downtime

Percent Excess Emissions (of monitored operating time) = Total duration of excess emission/Total monitored operating time x 100

ATTACHMENT C:

SUMMARY OF MONITORING SYSTEM DOWNTIME

Company: _____

Unit: _____ Quarter: _____

Incident Number	Start Month/Day/Time	Stop Month/Day/Time	Duration (hours)	Reason/ Corrective Action	Reason Code

TOTAL MONITORING SYSTEM DOWNTIME: _____ (in hours)

REASON CODES:
a = Monitor equipment malfunction
b = Non-monitor equipment malfunction
c = Calibration/QA
d = Other known causes
e = Unknown causes

ATTACHMENT D:

SUMMARY OF SOURCE DOWNTIME

Company: _____

Unit: _____ Quarter: _____

Incident Number	Start Month/Day/Time	Stop Month/Day/Time	Duration (hours)	Reason

TOTAL SOURCE DOWNTIME: _____ (hours)

ATTACHMENT E:

SUMMARY OF EXCESS EMISSIONS

Company: _____

Unit: _____ Quarter: _____

Pollutant: _____

Incident Number	Start Month/Day/Time	Stop Month/Day/Time	Duration (hours)	Reason/ Corrective Action	Reason Code

TOTAL EXCESS EMISSIONS: _____ hours

Reason Codes
a = Startup/shutdown
b = Control Equipment Failures
c = Process Problems
d = Fuel Problems
e = Other Known Problems (include soot blowing here)
f = Unknown Problems