



National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources

MODULE: 40 CFR Part 63 Subpart JJJJJ New Large Boilers



Initial Notification to Delegated Authority

Initial Notification: Due within 120 days of source startup

- Owner/operator name and address
- Physical location of boiler(s)
- Relevant standard
- Anticipated compliance date
- Source size, design, and method of operation
- Types of emission points within the source subject to the standard and types of HAP emitted
- Statement that source is an area source

Example Initial Notification Report
National Emission Standards for Hazardous Air Pollutants for
Industrial, Commercial, and Institutional Boilers Area Sources

SECTION I: GENERAL INFORMATION

Operating Permit Number (IF AVAILABLE)* _____ Facility ID Number (IF AVAILABLE)* _____

Responsible Official's Name _____ Title _____

Street Address _____

City _____ State _____ ZIP Code _____

* (e.g., Title V permit number)
* (e.g., Air Facility System (AFS) facility ID)

Facility Name _____

Facility Street Address (if different than Responsible Official's Street Address listed above) _____

Street Address _____

City _____ State _____ ZIP Code _____

Facility Local Contact Name _____ Title _____

Anticipated Compliance Date(s) (mm/dd/yyyy) (§63.9(b)(2)(iii))* _____
* See instructions on pg. 3 of this form to determine the compliance dates applicable to you.

4



What standards do I need to meet?

Numeric emission limits

Work practice standards

Emission reduction measures

Management practices

Operating limits for APCE

Operate in manner consistent with good air pollution control practices



Particulate Matter Emission Limits

BIOMASS-FIRED BOILERS:

- 0.03 lb/MMBtu PM (≥ 30 MMBtu/hr)
- 0.07 lb/MMBtu PM (< 30 MMBtu/hr)

OIL-FIRED BOILERS:

- 0.03 lb/MMBtu PM
- Combustion of only ultra-low-sulfur liquid fuel (≤ 15 ppm sulfur content) is considered an alternative method of meeting the PM emission standard. Such units are not required to meet the PM emission limit. Type of fuel combusted must be monitored and recorded monthly. If source burns new fuel type other than ultra-low-sulfur liquid fuel or gaseous fuels, must conduct performance test within 60 days of burning the new fuel.
- Units that commenced construction/reconstruction on/before 9/14/2016 and are meeting the alternative PM standard for low-sulfur-oil (≤ 0.5 weight percent sulfur content) burning boilers are given until 9/14/2019 before becoming subject to the PM emission limit, providing them time to decide how to comply (i.e., combust only ultra-low-sulfur liquid fuel or conduct a performance test demonstrating compliance).



No numeric limits for limited-use or seasonal boilers



Work Practice: Tune-Ups

- Tune ups every other year
 - First tune-up no later than 25 months from initial startup
 - Subsequent tune-ups conducted no more than 25 months after previous tune-up



Work Practice Requirements (continued)

Tune-up every 5 years if:

- Unit qualifies as a seasonal or limited-use boiler;
- Boiler equipped with oxygen trim system



First tune-up no later than 61 months from initial startup

Subsequent tune-ups conducted no more than 61 months after previous tune-up



Tune-Up Requirements

- You must:
 - Inspect the burner, clean/replace components as needed
 - Inspect flame pattern, adjust burner as needed
 - Inspect the system controlling the air-to-fuel ratio
 - Optimize emissions of CO
 - Measure effluent stream CO and O₂, before and after tune-up



If the unit is not operating on the required tune-up date, conduct within 30 days of startup.

Tune-up must be conducted while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.



Tune-up Documentation

Maintain a report of the tune-up onsite. The report must include the following:

- CO and O₂ in the effluent stream, before and after tune-up
- Description of any corrective actions taken as part of the tune-up
- Type and amount of fuel used over the 12-months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period



Meeting Emission Limits

To demonstrate compliance with emission limits you must:

- Minimize the boiler's startup and shutdown periods
- Develop and follow a site-specific testing plan
- Develop and follow a site-specific monitoring plan
- Conduct initial and triennial (every three years) performance tests for PM
- Establish operating limits during the performance test
- Monitor and collect data to demonstrate compliance with operating limits
- Conduct performance evaluations of your CMS



Minimizing Startup/Shutdowns

If your boiler is subject to an emission limit then:

- Need to minimize startup and shutdown periods
- Conduct startups/shutdowns according to boiler manufacturer's procedures

If the manufacturer's recommended procedures are not available, you must follow available recommended procedures for a unit of similar design.



Site-Specific Test Plan

Develop a site-specific test plan before conducting your required performance test. The site-specific test plan must include:

- Test program summary
- Test schedule
- Data quality objectives (pretest expectations of precision, accuracy and completeness)
- Internal and external quality assurance program

Submittal of test plan not required unless it is requested.

If requested, submit at least 60 days before your performance stack test. Must keep a copy of the site-specific test plan as a record.



Site-Specific Monitoring Plan

If you choose to demonstrate compliance through performance stack testing and subsequent compliance with operating limits, then you must develop a site-specific monitoring plan. Plan is required for any continuous monitoring system (CMS) including:

Continuous emission monitoring systems (CEMS)
Continuous opacity monitoring systems (COMS) or
Continuous parameter monitoring systems (CPMS)



Submittal of monitoring plan not required unless it is requested.



Initial PM Performance Test

You must conduct an initial performance test to demonstrate initial compliance with the PM limit and to establish operating parameters that you will follow until the next performance test.



Sample collection

EXCEPTION

New oil-fired boilers that combust only ultra-low-sulfur liquid fuels (distillate oil that contains ≤ 15 ppm sulfur) are not subject to the PM emission limits; therefore, no test is required.

Demonstrate compliance with limits by 9/17/2011 or 180 days after unit startup, whichever is later.



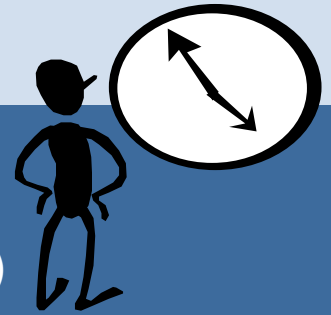
Initial PM Performance Testing



- Conduct at representative operating load conditions while burning the fuel(s) that has the highest emissions potential for PM
- Perform all tests in accordance with requirements set forth in the rule and test plan
- Minimum of 3 separate test runs
- To determine compliance with the limits, convert measured PM concentrations from the initial test to lb/MMBtu rates



Continuing Compliance



Conduct subsequent performance tests every third year (at least every 37 months)

In between tests monitor and collect data for operating parameters established during initial performance test

If your boiler's initial performance test results for PM show that your emissions are less than or equal to half of the limit, subsequent performance testing is only required every fifth year for PM, but must comply with all operating limits and monitoring requirements.

If the boiler burns a new type of fuel other than ultra-low-sulfur liquid fuel or gaseous fuels, new performance test is required within 60 days of burning new fuel type.

Boilers that commenced construction/reconstruction on/before 9/14/2016 that previously demonstrated that PM emissions were equal to or less than half of the PM emissions limit are given until 9/14/2021 to conduct a performance test, unless a new type of fuel, other than ultra-low-sulfur liquid fuel or gaseous fuels, is burned.



Establish Operating Limits

During the initial three-run performance stack test(s), you must establish operating limits for your PM air pollution control device(s).

Table 6 of the rule specifies how to establish operating parameters for:

- Operating Load
- Wet scrubbers (ΔP & flow rate)
- Electrostatic Precipitators (voltage & current)
- Fabric Filter Bag Leak Detection Systems
- Oxygen (%)



Demonstrate compliance with PM in between tests or in lieu of future tests with CMS by:

If you demonstrate compliance with emission limits using...	You must meet these operating limits...
Fabric filter control	Maintain opacity $\leq 10\%$ (daily block avg); OR Install/operate a bag leak detection system and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5% of operating time during a 6-month period.
Electrostatic precipitator control	Maintain opacity $\leq 10\%$ (daily block avg); OR Maintain a 30-day rolling average for total secondary electric power of the electrostatic precipitator at or above the operating level established during the most recent performance test demonstrating compliance with the PM limits.
Wet PM scrubber control	Maintain 30-day rolling average for pressure drop and liquid flow rate at or above the operating limit measured during the most recent performance test demonstrating compliance with the PM limit.
Operating Load	Maintain 30-day rolling average at or below 110% of the average operating load established during the performance test.



CMS Installation, Operation and Maintenance

You must comply with the CMS requirements in the rule including the following:

If you choose to comply with an opacity limit instead of operating parameters for an ESP or fabric filter, you must install, operate, certify, and maintain the COMS.

If you use a fabric filter to comply with an emission limit, then you must install, calibrate, maintain, and continuously operate the bag leak detection system, unless you choose to use an opacity limit.

If you have an operating limit that requires a CMS, you must install, operate, and maintain the CMS.



COMS Unit

- If using opacity operating limit: install, operate, certify and maintain each continuous opacity monitoring system (COMS) according to the following by the compliance date:
 - Install, operate, and maintain according to Performance Specification 1 of 40 CFR part 60, appendix B.
 - Conduct performance evaluation of each COMS according to 63.8 and according to Performance Specification 1 of 40 CFR part 60, appendix B.
 - Each COMS must complete a minimum of 1 cycle of sampling and analyzing for each 10-sec period and 1 cycle of data recording for each 6-min period.
 - Reduce COMS data.
 - Include in your monitoring plan procedures and acceptance criteria for operating/maintaining each COMS according to the requirements in 63.8(d). At a minimum, the plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS.
 - Operate and maintain each COMS according to the requirements of the monitoring plan and the requirements of 63.8(e). Identify out-of-control periods.
 - Record all the 1-hour block averages collected for periods during which the COMS is not out of control.



Leak Detection System

- If using a fabric filter bag leak detection system:
 - Install and operate a bag leak detection system for each stack of the fabric filter.
 - Install, operate, calibrate, and maintain in a manner consistent with the manufacturer's specifications and in accordance with EPA's *Fabric Filter Bag Leak Detection Guidance*.
 - System must be certified as capable of detecting PM emissions at concentrations ≤ 10 mg/m³.
 - Sensor must provide output of relative or absolute PM loadings.
 - Must have a device to continuously record the sensor output signal.
 - Must have an alarm to trigger when an increase in PM emission over a preset level occurs.
 - For positive pressure systems that do not duct all compartments to a common stack, a bag leak detection system must be installed in each baghouse compartment/cell.
 - Where multiple bag leak detectors are required, the instrumentation and alarm may be shared among detectors.



Data Collection

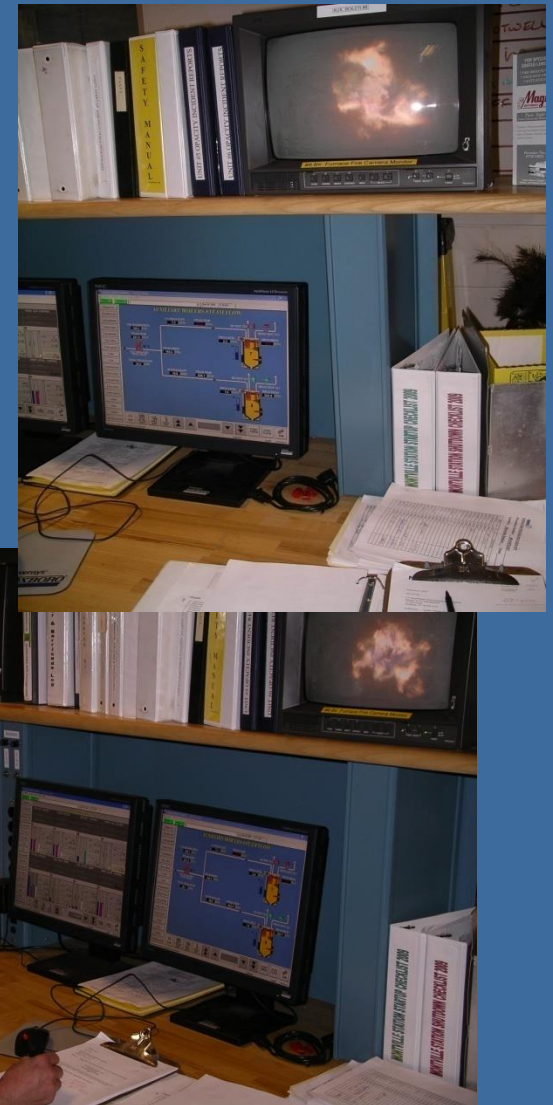
Operate the monitoring system and collect data *at all times while the boiler is operating*. Use all the data collected in assessing the operation of the control device and associated control system. However, ***you may not use data collected during the following periods*** to demonstrate compliance:

- Monitoring system malfunctions or out-of control periods
- Repairs associated with monitoring system malfunctions or out-of-control periods
- Required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan



You must maintain records of...

- ▶ Monthly fuel use for each boiler if the boiler is subject to a PM emission limit
- ▶ Compliant startup and shutdown procedures
- ▶ Malfunctions (occurrence and duration)
- ▶ Actions taken during malfunction to minimize emissions
- ▶ Notifications and reports, with supporting documentation
- ▶ Compliance with emission/operating limits
- ▶ Records for seasonal or limited-use boiler verifying qualification
- ▶ Compliance with tune-ups:
 - ▶ Identify each boiler, tune-up date, procedures followed, and tuning specifications



You must maintain records of...

- ▶ All inspection/monitoring data required by 63.11221 and 63.11222 and:
 - ▶ Date, place and time of the monitoring event
 - ▶ Person conducting monitoring
 - ▶ Method used
 - ▶ Operating conditions during the activity
 - ▶ Results of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation
 - ▶ Maintenance or corrective action (if applicable)
- ▶ The following if you use a bag leak detection system:
 - ▶ System output
 - ▶ System adjustments
 - ▶ System alarms and associated corrective actions



Records Retention

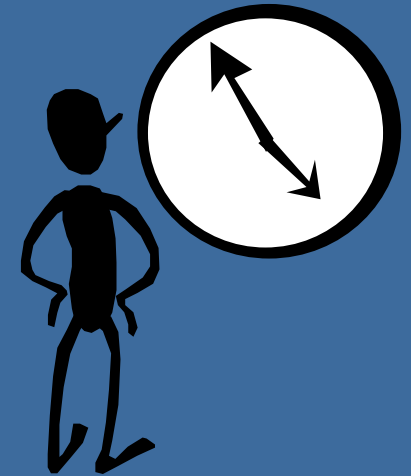


- ▶ Records must be readily available for review
- ▶ Keep records for 5 years
 - ▶ First 2 years: records on-site or instantly accessible by computer from central location
 - ▶ Years 3 to 5: can be kept off-site



Notifications and Reports

- ▶ **Initial notification:**
Due **120 days** after the source becomes subject
- ▶ **Notification of Compliance Status:**
Due 60 days after conducting PM test
- ▶ **Compliance Certification Report:**
 - ▶ Boilers subject to emission/operating limits- prepare first report by **March 1** of the year after startup then by March 1 of each calendar year. Submit by March 15 if deviations from limits are included.
 - ▶ Boilers only required to conduct a biennial or 5-year tune-up may prepare only a biennial or 5-year Compliance Certification Report. Report should be prepared by March 1 of the year after the calendar year during which a tune-up is completed.
- ▶ **Notification of Intent to Conduct a Performance Test:**
Due 60 days before test is scheduled



Notifications and Reports, continued

- ▶ **Notification of Intent to Commence Combustion of Solid Waste:**
Due 30 days prior to commencement
- ▶ **Notification of Use of an Alternative Monitoring Method** (if applicable)
- ▶ Notification that source is subject to special compliance requirements (if applicable)
- ▶ **Notification of Change:**
Due within 30 days of the change
 - ▶ Fuel switch
 - ▶ Physical change to boiler
 - ▶ Permit limits



Compliance Certification

Compliance Certification

- Boilers subject to emission/operating limits- prepare first report by **March 1** of the year after startup then by March 1 of each calendar year. Submit by March 15 if deviations from limits are included.
- Boilers only required to conduct a biennial or 5-year tune-up may prepare only a biennial or 5-year Compliance Certification Report. Report should be prepared by March 1 of the year after the calendar year during which a tune-up is completed.
- Include:
 - Statement by a responsible official
 - ✓ Official's contact info
 - ✓ Signature
 - ✓ Certify accuracy and completeness of the notification
 - ✓ Statement of whether the source has complied with all requirements
 - Deviations experienced
 - ✓ Time of occurrence
 - ✓ Corrective actions taken
 - Total fuel use by each boiler, for each month within the reporting period, if subject to PM emission limit



NOCS

Notification of Compliance Status

Due: 9/17/2011 or 120 days after startup, whichever is later

For boilers subject to a PM emission limit, due 60 days after test completion

- Methods to determine compliance
- Test results, emission observations, CMS performance evaluations, or other methods conducted
- HAP emitted
- Control equipment (or method) for each HAP for each emission point, and the control efficiency
- Statement of compliance with the relevant requirements
- Certification of tune-up completion
- Certification that compliant startup and shutdown procedures were used
- Certification that bag leak detection system monitoring plan has been prepared, and that system will be operated according to the plan (if applicable)
- If data from a previous test will serve as documentation of compliance, submit the data in lieu of the initial test results



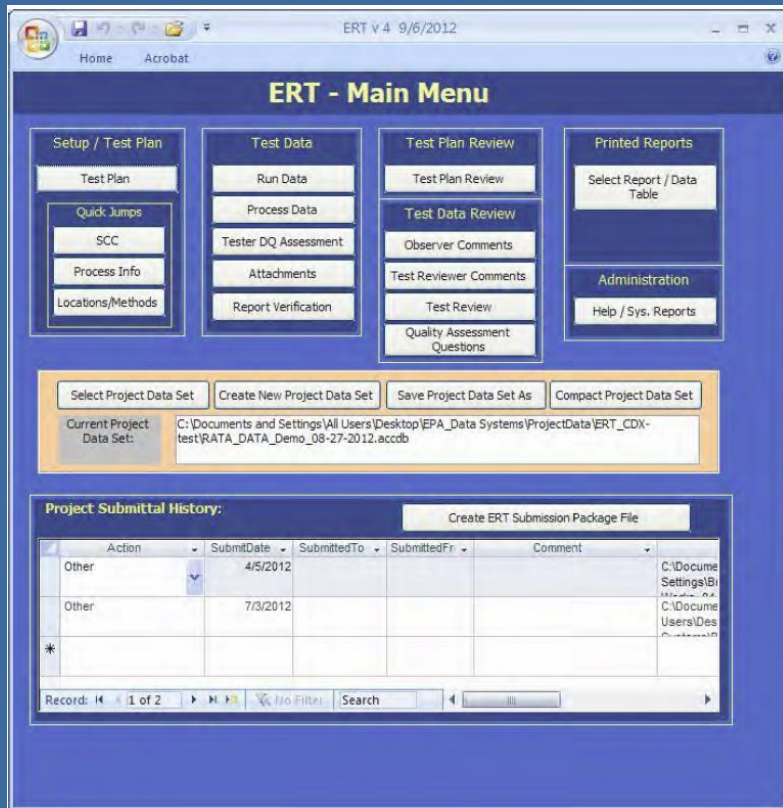
Electronic NOCS Reporting Requirements

As of January 1, 2014, the rule requires electronic reporting of the Notification of Compliance Status (NOCS) using the Compliance and Emissions Data Reporting Interface (CEDRI) through EPA's Central Data Exchange (www.epa.gov/cdx).

EPA is no longer accepting paper copies of the NOCS; however, sources which already submitted the paper NOCS prior to January 1, 2014 are not required to resubmit the NOCS electronically.



Stack Test Report Submissions



Stack test results are required to be submitted within 60 days of test

Test results are required to be submitted electronically for particulate matter using EPA's Electronic Reporting Tool (ERT) website

www.epa.gov/ttn/chief/ert



Where do I send notifications and reports?

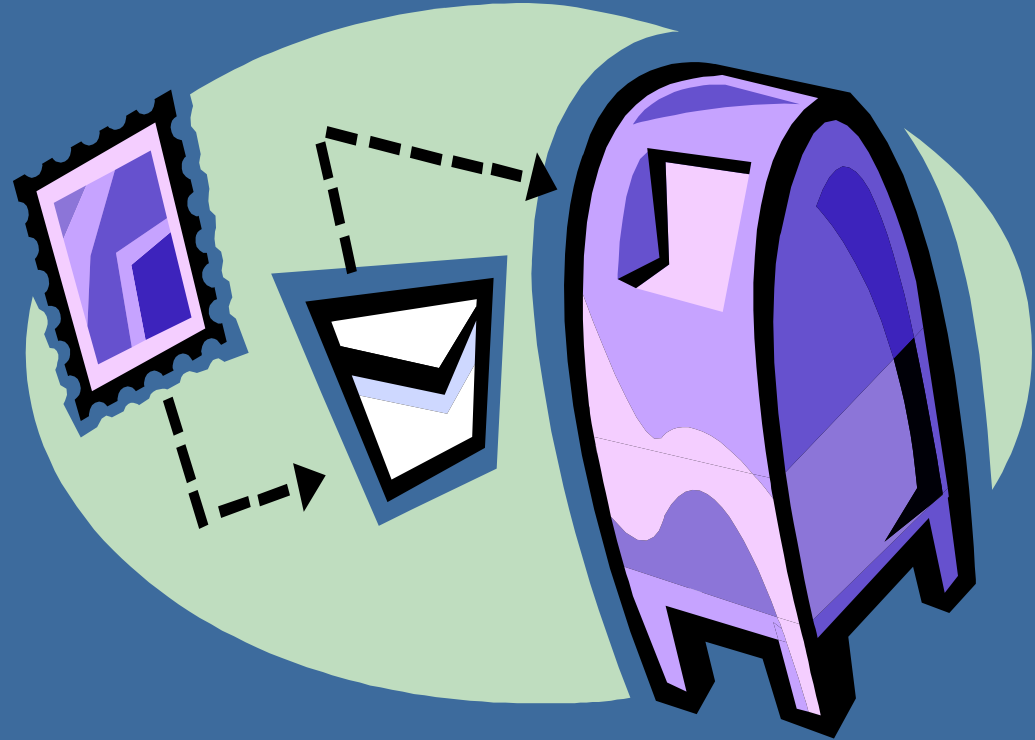
US Environmental Protection Agency

5 Post Office Square, Suite 100, Mail code: OES04-2

Boston, MA 02109-3912

Attention: Air Clerk

EPA has developed an electronic compliance reporting system for the NOCS. As of 1/1/2014, sources are required to submit the NOCS reports electronically and sources will receive an email confirming EPA's receipt.



Compliance Dates

Achieve compliance with all requirements of this rule by **May 20, 2011** or upon startup, whichever is later.

Demonstrate initial compliance with emission limits by **September 17, 2011** or 180 days after startup, whichever is later.



Visit the Boiler Compliance Page

www.epa.gov/boilercompliance

- ▶ Brochures
- ▶ Fact sheets
- ▶ Regulations
- ▶ Example notifications
- ▶ Tune-up guidance
- ▶ *Small Entity Compliance Guide For Area Source Boilers*
(This will help you determine how your boiler is affected by this rule.)
- ▶ ...and more!



Contacts

For Sources in New England:



Air Toxics Coordinator
U.S. EPA New England
617-918-1656



Compliance Analysis & Coordination Unit
CT Department of Energy & Environmental Protection
860-424-4152



Take Aways

Emission Limits and Work Practice Requirements:

- Tune-up every other year or every 5th year
- Limit for biomass-fired boilers: 0.03 lb/MMBtu PM (≥ 30 MMBtu/hr)
0.07 lb/MMBtu PM ($10 \leq \text{MMBtu/hr} < 30$)
- Limit for oil-fired boilers: 0.03 lb/MMBtu PM

Units that combust only ultra-low-sulfur oil are not required to meet the PM emission limit provided that the type of fuel combusted is monitored and recorded on a monthly basis.

Initial Compliance:

- Demonstrate initial compliance by 9/17/2011 or 180 days after startup, whichever is later
- To demonstrate initial compliance, conduct tests, establish operating limits, conduct CMS performance evaluations



Take Aways

Compliance Requirements:

- If using a control device, maintain operating limit
- If demonstrating compliance through testing and subsequent compliance with operating limits, develop a site-specific monitoring plan
 - If requested, submit at least 60 days before initial performance evaluation of CMS
 - Conduct performance evaluation of each CMS according to plan
 - Operate/maintain CMS according to plan
- Continuously monitor operating parameters
- If you operate fabric filter bag leak detection systems, use as specified
- Report deviations

Testing:

- Develop test plan
- Perform initial test
- Subsequent testing every 3 years



Take Aways

Monitoring:

- Monitor/collect data at all times
- Use only valid data to determine compliance
- If you have opacity monitoring limit, use COMS as specified

Reporting:

- Initial notification (9/17/2011 or 120 days after unit becomes subject)
- Notification of Compliance Status (9/17/2011 or 120 days after startup, whichever is later; for boilers subject to a PM emission limit, due 60 days after test completion)
- Compliance Certification
 - If subject to limits- prepare first report by **March 1** of the year after startup then by March 1 of each calendar year. Submit by March 15 if deviations from limits are included.
 - If only required to conduct a tune-up, prepare a biennial or 5-year Compliance Certification. Prepare by March 1 of the year after the calendar year in which tune-up is completed.
- Notification of Intent to Conduct Performance Test (60 days before test is scheduled)
- Test results (within 60 days of test)
- Notification of switching fuel (within 30 days of switch)
- Notification of commencing firing of solid waste (30 days prior to firing solid waste)
- Notification of use of an alternate monitoring method (if applicable)
- Notification that source is subject to special compliance requirements (if applicable)



Take Aways

Keep records of:

- Fuel use (if subject to PM emission limit)
- Compliance during startups and shutdowns
- Malfunctions and subsequent actions taken to minimize emissions
- Notifications and reports, with supporting documentation
- Compliance with emission/operating limits
- Compliance with tune-ups
- Inspection and monitoring data
- System output, adjustments, alarms, and corrective actions if you use a bag leak detection system

-Keep for 5 years

