

Boiler MACT Compliance

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Rule Elements

- Definition of unit categories
- Numeric emission limits
- Performance testing and fuel analysis
- Operating limits and continuous monitoring
- Boiler tune-ups and energy assessments
- Notifications, recordkeeping and reporting

Unit Categorization

- Units are categorized based on:
 - Major or area source of HAP emissions
 - New or existing unit
 - Unit design and fuel type
 - Firing capacity and limitations
- Units that combust “solid waste” are subject to the CISWI rule rather than boiler MACT
 - If secondary material is combusted, review the solid waste definition in 40 CFR 241.3
 - If warranted, petition EPA to reclassify a solid waste

Numeric Emission Limits

- Numeric emission limits apply to:
 - Coal-fired units ≥ 10 MMbtu/hr
 - Biomass, liquid and Gas 2 fired units ≥ 10 MMbtu/hr at major sources of HAP
 - New biomass and oil-fired units ≥ 10 MMbtu/hr at area sources of HAP
- Preparation for numeric emission limits
 - Assess compliance capability by collecting and analyzing emission and fuel data
 - Consider whether to comply with alternative limits
 - If necessary, evaluate emission reduction alternatives

Emission and Fuel Data Analysis

- ❑ When assessing whether a unit is capable of complying with numeric emission limits:
 - ❑ Emission and fuel data should be obtained consistent with rule procedures and methods
 - ❑ Data should encompass the full range of expected fuels and operating conditions
 - ❑ The analysis should take into account data variability
 - ❑ Non-detect values should be analyzed using the method detection limit

Alternative Emission Limits

- ❑ Alternative emission limits are available to units at a major source of HAP emissions
 - ❑ Total selective metals (TSM) limits in lieu of PM limits
 - ❑ Steam output-based limits in lieu of fuel input-based limits
 - ❑ Emissions averaging for units in a common category

Emission Reduction Alternatives

- If a unit is incapable of meeting numeric emission limits, evaluate emission reduction alternatives, such as:
 - Improvement of existing emission controls
 - Installation of new emission controls
 - Fuel supply controls
 - Fuel treatment
 - Fuel switching

Performance Testing

- ❑ Performance (stack) testing is required for numeric emission limits, unless compliance is demonstrated by fuel analysis or a CEMS
- ❑ Preparation for performance testing
 - ❑ Develop a stack testing plan
 - ❑ Ensure that operating load during testing is the maximum expected load for the unit
 - ❑ Ensure that sample volumes are adequate to detect pollutants at levels below the emission limit

Fuel Analysis

- Fuel analysis may be used in lieu of performance testing for Hg and HCl limits
- Preparation for fuel analysis
 - Develop a fuel monitoring plan
 - Ensure that fuel sampling and analysis by fuel suppliers complies with rule requirements
 - If warranted, perform laboratory audits and specify additional QA/QC requirements

Operating Limits

- Unless monitoring is performed with a CEMS or PM CPMS, operating limits must be established during performance tests for:
 - Emission control device operating parameters
 - Flue gas O₂
 - Boiler load
- Preparation for operating limits
 - Analyze operating data to assess compliance capability
 - When assessing compliance capability, consider the malfunction affirmative defense provisions in the rule

Continuous Monitoring

- Continuous monitoring provisions apply to operating limits and any CEMS or PM CPMS
- Preparation for continuous monitoring:
 - Develop a monitoring plan for each continuous monitoring system
 - Ensure that CEMS will comply with 40 CFR Part 60 performance specifications
 - Ensure that parameter monitoring systems will comply with tolerance and performance evaluation provisions
 - Ensure the adequacy of data processing and storage
 - Assess the reliability of monitoring systems

Tune-Ups

- Initial and recurring tune-ups are required for:
 - All units at a major source of HAP
 - Solid and liquid fuel units at an area source of HAP
- Preparation for tune-ups:
 - Review tune-up scope provisions and guidance
 - Select a qualified entity to perform tune-ups
 - If a unit is subject to a NO_x RACT tune-up requirement, NO_x and CO tune-ups may need to be reconciled

Energy Assessments

- Initial energy assessments are required for:
 - Existing units at major source of HAP
 - Existing solid and liquid fuel units ≥ 10 MMbtu/hr at area source of HAP
- Preparation for energy assessment:
 - Review rule and guidance for assessment scope
 - Select a qualified energy assessor
 - At a complex facility, assessment duration will likely exceed the maximum required duration in the rule
 - Address assessment recommendations

Notifications

- Initial notification
 - For an existing unit, within 120 days after publication of the final rule
 - For a new unit, within 15 days of startup
- Initial compliance demonstration notifications
 - Notice of intent at least 60 days before any performance test
 - Notification of compliance status within 180 days after the compliance date

Thank you!

The screenshot shows the Zephyr Environmental Corporation website. At the top is the Zephyr logo and a navigation menu with links for SERVICES, TRAINING, PUBLICATIONS, NEWS, and ABOUT. Below the navigation are three main service areas: CONSULTING, TRAINING, and DATA SYSTEMS. A central text block describes the company as a privately held, full-service environmental, health and safety (EHS) firm. It mentions that the company was founded in 1994 and works with various industry sectors. A sidebar on the left contains links for LOCATIONS, CONTACT, LINKS, CAREERS, and a HAZMAT ACADEMY logo. The bottom of the page lists office locations: AUSTIN | HOUSTON | BALTIMORE | DUBAI and provides contact information: Zephyr Environmental Corporation | 800-452-5558 | info@zephyrenv.com.

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Zephyr Environmental Corporation
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Zephyr takes great pride in being a client-focused, solution-oriented service company. Included among our professional staff are chemical, civil, environmental, industrial, and mechanical engineers; certified safety professionals; hydrogeologists; meteorologists; biologists; and environmental scientists.

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