

 Trinity Consultants is a leading global environmental consulting firm that brings 50 years of experience providing services and solutions in the EHS Regulatory Compliance, Built Environment, Life Sciences, and Water & Ecology markets. Trinity has the technical expertise, industry depth, and specialized capabilities to help clients achieve their goals across the natural and built environments.

The EPA released final rules for boilers and process heaters at major sources of hazardous air pollutants (HAPs) on January 31, 2013 (40 CFR 63 Subpart DDDDD) and for boilers at area sources of HAPs on February 1, 2013 (40 CFR 63 Subpart JJJJJJ). These rules require energy assessments as noted below:

- Area source constructed or reconstructed on or before June 4, 2010
 - Energy Assessment for coal, biomass or oil-fired boilers with ratings > 10 MMBtu/hr; assessment deadline (need deadline update)
- Major source constructed or reconstructed on or before June 4, 2010
 - Energy Assessment for boilers and process heaters of all fuel types and sizes; assessment deadline (need deadline update)

Energy Assessment Requirements

The regulations require that the energy assessment includes the following elements:

1. A visual inspection of the boiler system
2. An evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints
3. An inventory of major energy use systems consuming energy from affected boiler(s) that are under boiler owner/operator control
4. A review of architectural and engineering plans, facility operation and maintenance procedures/logs, and fuel usage
5. A review of the facility's energy management practices and recommendations for improvements consistent with the definition of energy management practices, if identified (major sources only)
6. A list of major energy conservation measures that are within the facility's control
7. A list of the energy savings potential of the energy conservation measures identified

8. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments

Duration and Scope

The energy assessment is required for the boiler system and for major energy use systems consuming energy from affected boilers. The extent of energy use systems that must be evaluated depends on the total annual heat input capacity of affected boilers at the facility. See below for details.

Energy Use System Evaluation Requirements

Annual Heat Input Capacity of Affected Boilers (TBtu/year)	Maximum On-site Technical Hours in Length (Hours)	Evaluate boiler system(s) and energy use systems accounting for X% of affected boiler(s) energy production
< 0.3	8	50%
0.3 - 1.0	24	33%
≥ 1.0	24 + 8 hours for each additional 1.0 TBtu/yr (not to exceed 160 hours)	20%

On-Site Assessment

The rule requires that the assessment be conducted by a Qualified Energy Assessor (QEA). Trinity has certified QEAs who can assist with the on-site portion of the energy assessment as follows:

- The visual inspection of the boiler systems including the four basic components of the steam system as follows:
 - Generation (boiler and related components)
 - Distribution (piping, insulation, etc.)
 - End use systems (as appropriate and required)
 - Return (condensate, steam traps, flash tanks, etc.)
- Evaluation of the operating characteristics of the affected boiler systems, specification of energy use systems, operating and maintenance procedures, and unusual operating constraints, including:
 - Boiler tune-ups and inspections (procedures and frequency)
 - Feedwater and intake air considerations
 - Blowdowns
 - Maintenance and operation records
 - Steam trap and insulation inspections (frequency and procedures)

Energy Assessment Report

Following the on-site assessment, a list of major energy conservation measures must be prepared and approximate cost of those measures must be determined. Trinity's QEAs develop probable cost analyses of recommended Energy Conservation Opportunities and Energy Conservation Measures (ECO's/ECM's) and provide potential operational cost savings, renewable energy strategies, and simple payback periods. The energy savings potential of identified conservation measures and the time frame for recouping the investment for those measures is evaluated and summarized in a written report. The report is not required to be submitted, but must be maintained on-site. The Notification of Compliance Status, due on the compliance date, requires documentation that the energy assessment has been completed.

Energy Efficiency Credits

The regulations for major sources allow an option for existing boilers and process heaters to utilize efficiency credits for compliance demonstration in lieu of installing controls. This allows the source to take credit for implementing energy conservation measures identified in the energy assessment. The process to utilize these credits involves establishing an emissions benchmark, calculating and documenting efficiency credits, developing an Implementation Plan, and applying the efficiency credit according to procedures provided in the regulations.

Energy Management Systems/ISO 50001

An Energy Management System (EnMS) compatible with ISO 50001 that includes the affected unit(s) will satisfy the Boiler MACT energy assessment requirement. If your facility is contemplating an EnMS or already has a system in place, you may be able to leverage it to demonstrate compliance in lieu of the energy assessment.

Trinity Can Help

For over 50 years, Trinity Consultants has helped industrial facilities determine applicable environmental regulations and achieve compliance in the most efficient way possible. Our extensive industry experience enables us to effectively assist companies in complying with NESHAP program requirements and implementation.

Trinity provides professional training courses in energy assessments, taught by senior-level consultants who are energy assessment experts. We also provide EnMS ISO 50001 training and can develop customized training courses designed to meet your needs.

Trinity understands the regulations behind energy assessment requirements and can assist you with a comprehensive strategy to comply with all requirements of the boiler regulations. We understand how operational changes can affect your facility, including triggering permit requirements or New Source Performance Standards. We can help you evaluate what additional effects potential energy efficiency projects may have on your facility and implement a process that minimizes disruption while enhancing compliance.

ISO 9001:2015 certified at our corporate office in Dallas, Texas

Qualified Energy Assessor

- Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to
 - Boiler combustion management
 - Boiler thermal energy recovery, including
 - Conventional feed water economizer
 - Conventional combustion air preheater
 - Condensing economizer
 - Boiler blowdown thermal energy recovery
 - Primary energy resource selection, including
 - Fuel (primary energy source) switching
 - Applied steam energy versus direct-fired energy versus electricity
 - Insulation issues
 - Steam trap and steam leak management
 - Condensate recovery
 - Steam end-use management
- Capabilities and knowledge includes, but is not limited to
 - Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation
 - Familiarity with operating and maintenance practices for steam or process heating systems
 - Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand
 - Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods
 - Boiler-steam turbine cogeneration systems

CONTACT OUR TEAM!

For more information about how we can help your organization, please contact us.

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