

Boiler MACT Energy Assessment

Achieve compliance with EPA Major Source Boiler MACT rules

- Many major source boilers are not yet in compliance with EPA rules
- Many production and powerhouse personnel at facilities with affected boiler and steam systems are not aware of the EPA requirement for an energy assessment
- Periodic boiler tuning is not enough to bring boilers into compliance

Solution

The ABB Boiler Energy Assessment helps bring affected boiler and steam systems into compliance with EPA rules. Assessment findings are presented in a report, identifying specific opportunities and potential savings for improving boilers and steam system efficiency. The ABB Boiler Energy Assessment can also be utilized to provide a benchmark for calculating energy credits for emissions compliance.

EPA energy assessment scope

EPA boiler MACT rules specify that the following seven items must be included in the energy assessment:

1. A visual inspection of the boiler system (e.g. cracks, corrosion, leaks, insulation)*
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*
4. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage*
5. A list of major energy conservation measures that are within the facility's control
6. A list of the energy savings potential of the energy conservation measures identified
7. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

* Covered in the ABB MACT Boiler Energy Assessment



EPA rulings

The EPA has issued two primary rules affecting industrial, commercial and institutional boilers as part of the National Emission Standards for Hazardous Air Pollutants (NESHAP) program. The two rules are commonly referred to as Boiler GACT (Generally Available Control Technology) and Boiler MACT (Maximum Achievable Control Technology).

Boiler GACT defines the regulations for boilers and process heaters at 'area' source facilities, while Boiler MACT is defined for 'major' source facilities. Major source facilities represent those that emit at least 10 tons per year of any hazardous air pollutant (HAP) or at least 25 tons per year of any combination of HAPs.

The EPA boiler MACT rules impose various technology-based requirements for emissions compliance based on the emission levels already achieved by the best performing similar units. The MACT rules also include a one-time energy assessment at affected facilities. This assessment involves evaluating boilers, process heaters and steam systems to identify opportunities for energy savings.

Qualified energy assessors

ABB Optimization Services personnel are Qualified Energy Assessors as designated in the EPA Energy Assessment Requirements, and have extensive experience with boilers and steam systems. In particular, the ABB Industrial Boiler Fingerprint service provides a detailed evaluation of boiler operating procedures, instrumentation and controls, to assess

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and improve boiler efficiency. Our engineers commonly evaluate energy savings during boiler diagnostic evaluations and help customers achieve those savings with our control and advanced process control implementation services. ABB Optimization Engineers possess the experience and capabilities needed to successfully perform energy assessments.

Reporting

The ABB MACT Boiler Energy Assessment provides an on site evaluation to cover the first four items required in the energy assessment submitted to the EPA (see *EPA energy assessment scope*). This is followed by a detailed offsite analysis of the information to identify and assess energy savings opportunities. The results are documented in a comprehensive report, which provides the conservation measures and efficiency improvement information required by the final three items in the energy assessment.

The energy conservation measures identified in the assessment provide recommendations for moving toward optimal performance of the boilers, steam system, and energy users. The financial benefit associated with each recommendation is also provided.

Implement

In addition to the ABB Boiler Energy Assessment, services can be scheduled to *Implement* and complete the improvement recommendations. Improvements can be carried out over time, beginning with those that provide the greatest financial return. ABB is available to implement the improvements or partner with site personnel to achieve maximum savings.

The implementation execution ensures that changes can be made and maintained, with steady progress toward the goal of sustained performance.

What sets this solution apart

ABB experience with boiler instrumentation and controls is best in class. ABB offers multiple services for improving the efficiency of boilers and steam system operations, including: Industrial Boiler Optimization services, DCS Control Logic Programming, Control Loop Tuning, and Advanced Process Control.

The boiler MACT energy assessment is a specialized service. The experience of ABB engineering in this field has led to the development of efficient procedures to assess boiler performance and identify energy savings opportunities.

ABB's past successes in identifying substantial savings opportunities, highlights the effectiveness of the procedures and the ability of qualified engineers to provide the highest value service.

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Notes:

<http://www.epa.gov/boilercompliance/>