

Energy Assessment Information

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

40 CFR Part 63 Subpart JJJJJJ

<http://www.epa.gov/ttn/atw/boiler/fr21mr11a.pdf>

Who must conduct an Energy Assessment? (§63.11214(c))

Owners and operators of existing coal, biomass, or oil-fired boilers with a heat input capacity of 10 million Btu per hour or greater (\geq 10MMBtu/hr). This rule does NOT affect gas-fired boilers.

By when must I comply with the initial Energy Assessment? (§63.11196(a)(3))

Existing Sources: One-time energy assessment conducted by no later than March 21, 2014.

New Sources or Gas-Fired Boilers: Not subject to an energy assessment.

How do I demonstrate compliance? (§63.11214 (c)(3))

1. Owners or operators of affected sources must submit a signed certification in the Notification of Compliance Status (NOCS) report that an energy assessment of the boiler and energy use systems was completed. An example NOCS report is available at:
www.epa.gov/ttn/atw/boiler/imptools/area_tuneup_noc.docx
2. Owners or operators of affected sources must also prepare and submit, upon request, the energy assessment report.

What are the Requirements? (§63.11201, Table 2)

Existing coal, biomass, or oil boilers (\geq 10 MMBtu/hr) must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment conducted on or after January 1, 2008 must meet the following requirements:

- a. A visual inspection of the Boiler system.
- b. An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
- c. Inventory of major systems consuming energy from affected boilers.
- d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
- e. A list of major energy conservation measures.
- f. A list of the energy savings potential of the energy conservation measures identified.
- g. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

How does the rule define Energy Assessment? (§63.11237)

- (1) Energy assessment for facilities with affected boilers using < 0.3 trillion Btu per year (TBtu/year) heat input: 1 day in length maximum.

The boiler system and energy use system accounting for at least 50% of the affected boiler(s) energy output evaluated to identify energy savings opportunities, within the limit of performing a one day energy assessment.

- (2) Energy assessment for facilities with affected boilers and process heaters using 0.3 to 1 TBtu/year: 3 days in length maximum.

The boiler system(s) and any energy use system(s) accounting for at least 33 % of the affected boiler(s) energy output evaluated to identify energy savings opportunities, within the limit of performing a 3-day energy assessment.

- (3) Energy assessment for facilities with affected boilers and process heaters using > 1.0 TBtu/year: Length of time not specified.

Boiler system(s) and any energy use system(s) accounting for at least 20% of the affected boiler(s) energy output evaluated to identify energy savings opportunities.

- (4) Energy use system includes, but not limited to, process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air conditioning (HVAC) systems; hot heater systems; building envelop; and lighting.

Who is a Qualified Energy Assessor? (§63.11237)

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

How do I find a Qualified Energy Assessor in North Carolina?

The following groups/firms have requested to be listed as qualified energy assessors. If you want to be added to this list, please contact Paula.Hemmer@ncdenr.gov. *Note: North Carolina Division of Air Quality (NC DAQ) is providing this information as a resource to facilities affected by 40 CFR Part 63, Subpart JJJJJJ. NC DAQ does not endorse any one group or firm. Affected facilities are encouraged to perform their own due diligence in selecting a qualified energy assessor.*

NC DAQ will begin offering cost-free energy assessments to reduce energy usage and greenhouse gas emissions at facilities through a voluntary program funded by the EPA. These assessments are expected to meet the requirements for a boiler energy assessment under GACT Subpart 6J. Funding is limited under this program and all assessments must be completed before July 2013. To obtain more information on the program and the energy assessment requirements, please go to http://www.ncair.org/monitor/eminv/qcc/ghg_grant.shtml.

The EI Group

Michael Walker, PE, CEM

Audrey Britton, REP

919-657-7500

mwalker@ei1.com

abritton@ei1.com

www.ei1.com

Waste Reduction Partners

Triangle J Council of Governments

Terry Albrecht, PE, CEM

828.251-7475

terry.albrecht@ncdenr.gov

<http://wastereductionpartners.org/>

North Carolina State University – Department of Mechanical and Aerospace Engineering

Industrial Assessment Center and Energy Management Program

Dr. Herbert Eckerlin, PE

919-515-5227

eckerlin@ncsu.edu

<http://legacy.mae.ncsu.edu/Centers/IAC/index.html>