Industrial Boiler MACT—Near-Term, Cost-Saving Actions

McIlvaine Hot Topic Hour—Industrial Boiler MACT - Impact and Control Options

March 22, 2012

ICI MACT Clock Ticking

- Area Source GAGT—never stayed, clock started 03/21/11. No Action Assurance (NAA) Letter
- Major Source MACT—”unstayed,” clock started 05/18/11. No Action Assurance (NAA) Letter

Tune-Up

- Who is required:
  - Area Sources (6J Rule): all biomass and oil-fired units
  - Major Source (5D Rule):
    - New/existing NG and Refinery gas-fired units (yearly)
    - New/existing <10MMBtu/hr: every 2 years after initial tune-up
- What is required:
  - Review tune-up scope provisions and guidance
  - Select a qualified entity to perform tune-ups
  - If a unit is subject to NOx RACT tune-up requirement
  - NOx and CO tune-ups may need to be reconciled

Tune-Up Steps

- Inspect burner and clean/replace any components as necessary
- Adjust the burner as necessary to optimize the flame pattern
- Inspect the air-to-fuel ratio control system to ensure it is calibrated and functioning properly
- Optimize emissions of CO consistent with manufacturer's specifications
- Measure CO and O2 levels in exhaust before/after tune-up
- Record type/amount of fuel used for previous 12 months
- Submit a signed statement documenting tune-up

Energy Assessments (EA)

- Who is required:
  - Existing units at major source of HAP (5D Rule)
  - Existing solid and liquid fuel units ≥10 MMBTu/hr at area source of HAP (6J Rule)
- What is required:
  - Visual Inspection
  - Inventory of major energy-consuming systems
  - Review of available architectural and engineering plans
  - Review of energy management practices
  - List of major energy conservation measures
  - List of energy savings
  - Comprehensive report detailing ways to improve efficiency

Energy Assessment (EA)

- Covers boiler/process heater and the energy use system **within Source's fence line** (e.g., process heating, compressed air, machine drive, process cooling, hot water, HVAC, lighting)
  - Energy use <34 MMBtu/hr: 1 day max; at least 50% of output
  - Energy use >34MMBtu/hr and <114 MMBtu/hr: 3-day max; at least 33% of energy output
  - Energy use >114 MMBtu/hr: at least 20% of output
- "Qualified Energy Assessor" *demonstrated capabilities (and knowledge) to evaluate energy savings opportunities for steam generation and major energy using systems*
- EA completed after January 1, 2008 that meets (or is amended to meet) requirements of rule satisfies EA requirement

Tune-Up/EA Implications

- Tune-Up: reduce energy use, emissions. Affect compliance options
- Energy Assessment: identify efficiency improvements, CHP economics
  - NG CHP:
    - Lower steam costs, higher efficiency, reduced emissions (CAA, GHG)—MACT+
    - CHP Payback: 6-7 years (www.epa.gov/sectors/pdf/energy/report.pdf)
  - DOE/EE:
    - Financial Incentives (www.eere.energy.gov/manufacturing/states/pdfs/incentives_boiler_mact.pdf)
    - Regional Clean Energy Assistance Centers
  - Alliance for Industrial Efficiency

Compliance Dates

- Initial Registration - past due (September 2011)
- Boiler Tune-Up—MACT
  - 5 YR: gas units <5 MMBtu/hr
  - 2 YR: limited use, boilers < 10 MMBtu/hr
  - 1 YR: >10 MMBtu/hr
- Boiler Tune-Up--GACT
  - 5 YR: liquid <5 MMBtu/hr, seasonal
  - 2 YR: all others
- Tune-ups: extended 1-year to March 21, 2013
  - No Action Assurance Letter
- One-time Energy Assessment: by March 21, 2014

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