INDUSTRIAL BOILER MACT

Option Planning and Creating a Plan

Goal of this Presentation

Present A Structured Approach
To Defining Options And
Creating A Compliance Plan

Compliance Planning Process

1. Define Goals and Constraints
2. Gather Data
3. Identify Compliance Alternatives by Pollutant
4. Develop Composite Compliance Solutions
5. Select a Compliance Plan

1. Define Goals and Constraints

- Required Operating Life
- Required Capacity
- Alternative Fuels to be Evaluated (Natural Gas, Biomass, Biogas, NHSM Alternate Fuel, etc.)
- O&M Staffing Constraints
- Space for Emissions Control Equipment
- Unit Outage Constraints

2. Gather Data

- Data to Confirm Fuels are Not Solid Waste
- HAP Emission Inventory or Facility Status (Title V Permit) to Confirm Major Source Status
- Existing Boiler Emission Rates
  - Conduct Informational Stack Testing if Required
- Existing and Alternate Fuel Analyses
  - Including Mercury and Chlorine Ranges
- Performance of Existing Emission Controls

3. Identify Compliance Alternatives by Pollutant

- For Each Pollutant (PM, HCl, Hg, CO, D/F) Compare Existing Emissions to Emission Limits
- Rank Compliance Alternatives by Easiest to Most Difficult or Costly
- Also Consider Impacts on Pollutants Not Regulated Under Industrial Boiler MACT Rule (e.g. NOx, SOx)

3. Identify Compliance Alternatives by Pollutant (cont.)

- No Physical Change Required
  - Demonstrate Compliance by Fuel Analysis
  - Demonstrate Compliance by Stack Performance Testing
- Boiler Tuning
- Emission Control System Tuning
- Fuel Blending or Tighter Fuel Specifications

3. Identify Compliance Alternatives by Pollutant (cont.)

- Add In-Situ Emission Controls
- Add Front-End or Back-End Emission Controls
- Co-Fire With Natural Gas or Other Fuel
- Switch Fuels
  - Lower Cl or Hg Solid Fuel
  - Natural Gas or Biogas, Etc.
- Replace Boiler with Gas Boiler
- Replace Boiler with CT/HRSG

4. Develop Composite Compliance Solutions

- Combine the Compliance Solutions for Each Pollutant into Composite Compliance Solutions
  - Some Technologies Include Co-Control Benefits for Other Pollutants (e.g. PAC Injection for Hg also Controls D/F)
  - Some Technologies Increase Other Emissions (e.g. Combustion Tuning for CO Generally Increases NOx)

4. Develop Composite Compliance Solutions (cont.)

- Develop Cost and Performance Parameters for Each Composite Compliance Solution
  - Capital Costs
  - Fuel Costs
  - Sorbent Injection Rates/Costs
  - Auxiliary Power Requirements/Costs
  - Solid Waste Disposal Quantities/Costs
  - O&M Labor Requirements/Costs
  - Any Impacts on Capacity, Availability, or Efficiency
  - Implementation Duration

5. Select a Compliance Plan

- If Multiple Composite Compliance Solutions are Identified, Evaluate the Alternatives on a Life-Cycle Cost Basis
- Also Evaluate Non-Economic Considerations
  - Potential for Meeting Probable Future Environmental Regulations
  - Impacts of Fuel Interruptions
  - Fuel Price Variability
  - Implementation Duration
  - Risk of Violations

Thank You

Questions / Discussion

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