

REINHOLD ENVIRONMENTAL Ltd.



2010 APC Round Table & Expo Presentation

July 18-20, 2010, in Concord, NC / Hosted by Duke Energy

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A Review of Mercury Removal Technologies with a Cost Comparison

Panel Discussion

Reinhold Roundtable
July 19 & 20, 2010

Panelists

- Sid Nelson – Albemarle Sorbent Technologies
- Rob Nebergall – Norit Americas
- Mark Ehrnschwender – Evonik Energy Services
- Tom Pearson – Alstom
- Randy Fields – Dynegy Midwest Gen
- Brandon Looney – Southern Company Services

Expected Characteristics of the MACT

- **MACT will be an emission based standard**
 - Percent removal (e.g. 90% removal) is only a reference point for average coals
 - A low mercury coal will only have to meet the emission limit and not achieve 90%
 - A high-mercury coal will have to capture >90% of the mercury
- **There will be no sub-categorization according to coal type**
- **There may be the potential to average between boilers within the fence line**

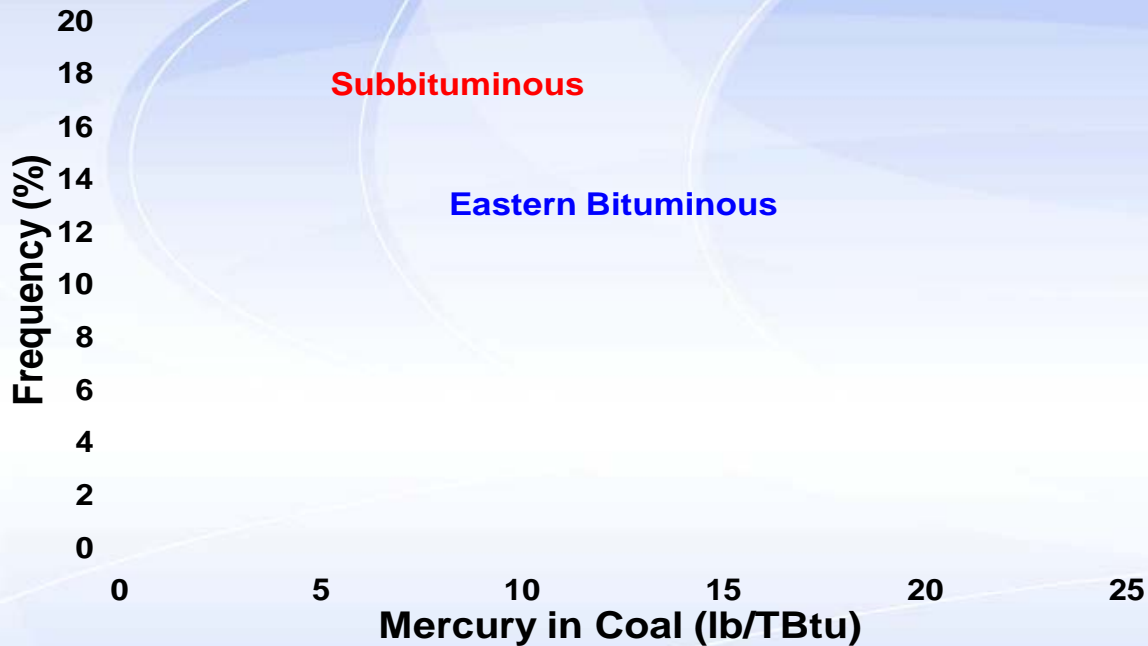


Technology Decision Framework

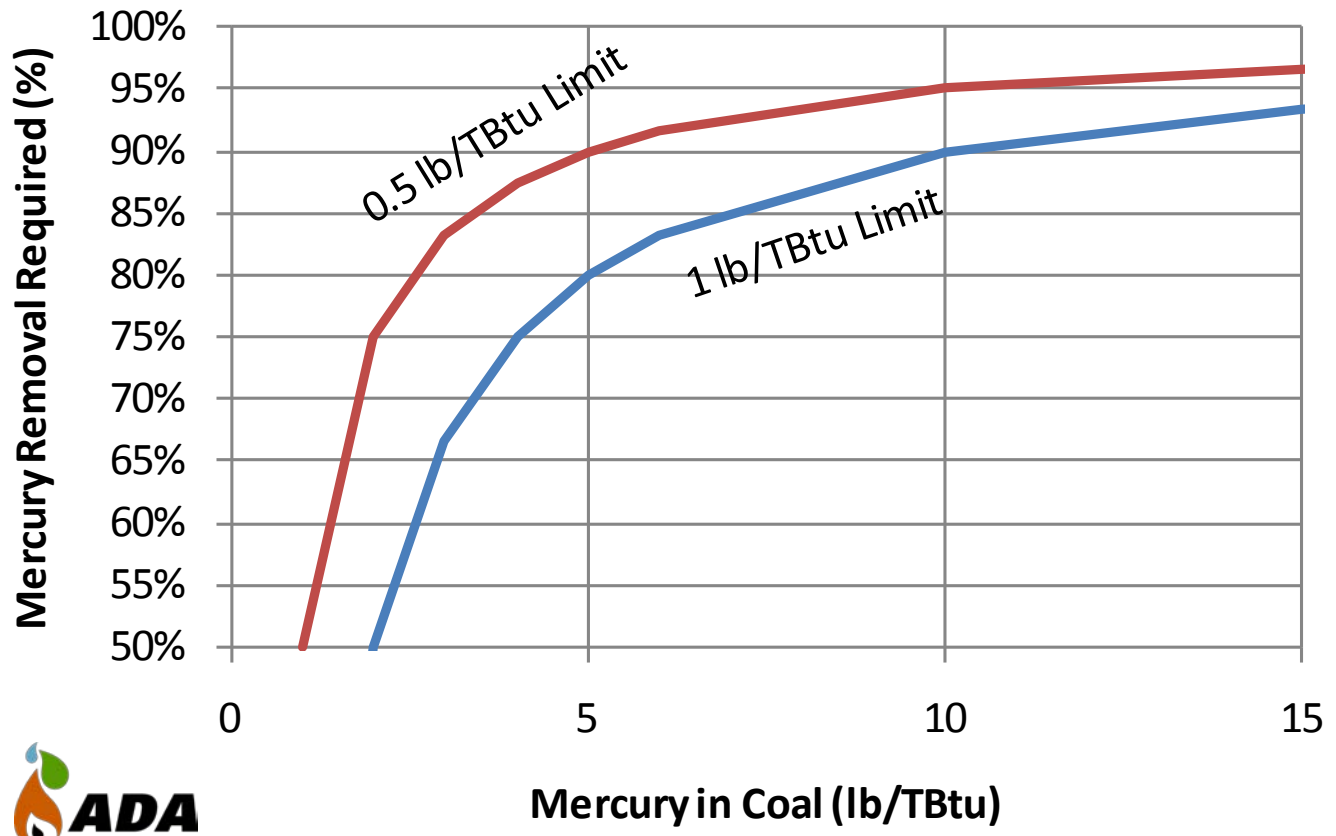
- **Overlapping Multidimensional Regulatory Landscape**
 - PM → Regional Haze, NAAQS, MACT (metals)
 - SO₂ → Transport Rule, Regional Haze, NAAQS
 - NO_x → Transport Rule, Regional Haze, NAAQS
 - Mercury → MACT
 - Dioxins/Furans → MACT
 - Acid Gases → MACT, Regional Haze

Mercury Control and MACT

Mercury in Bituminous and Subbituminous Coals



Mercury Control and MACT



Considerations

Plant Configuration

- Fuel type and selection
 - Sulfur, Mercury, Chlorine
- APC Equipment
 - LNB, SNCR, SCR
 - FF vs ESP
 - WFGD, SDA, DSI
- Duct run and footprint limitations

Balance of Plant

- Ash – beneficial use
- Secondary emissions caused by control technology
 - PM
 - Halogens
- Scrubber solutions
- Water
- Co-benefits

Agenda

- 1:30 – 1:40 Introduction – Jean Bustard
- 1:40 – 1:50 Sid
- 1:50 – 2:00 Rob
- 2:00 – 2: 10 Phillip
- 2:10 – 2:20 Alstom
- 2:20 – 2:30 Randy
- 2:30 – 2:40 Brandon
- 2:45 – 3 pm Q&A
- Adjourn 3 pm