ESP Improvements to meet MATS and MACT Rules

McIlvaine Hot Topic Hour

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ESP Aftermarket Offerings

- Process and Performance Analysis
- Inspections & Tune-ups
- Replacement Parts
- Life Extensions
- Rebuilds
- Upgrades
Evaluating an ESP for MATS or MACT Compliance

• What was it originally designed to do?
  – Flow rate
  – Fuel & Ash Characteristics
  – Emission Limits

• How is it operating now?
  – Changes to fuel or flow?
  – Maintenance history?

• Where does it need to be?
  – Emission limit
  – Sorbent injection?
ESP UPGRADE OPTIONS

- Improved gas distribution
- New Internals – collectors, electrodes
- Improved Rapping
- Increased power - more T/R sets, or
- Hi Frequency TRs & control systems
- Flue gas conditioning
- Raise the roof
- Additional inlet / outlet fields
- New parallel ESP
- Full or part bag house conversion

Various potential solutions tailored to specific site
Ash resistivity is the MAJOR factor in ESP sizing and resulting emissions performance.
KC LABORATORY - RESISTIVITY APPARATUS (New Jersey)

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Resistivity Cell & Electrode
Recent Examples of ESP Upgrades

- **Tumbling Hammer to Magnetic Rapper Conversion**
- **Complete ESP Replacement**
- **New Rigid Electrode System**
- **European to American type ESP Conversion**