CEMS
Issues & solution

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Certification & accreditation

• 100% installation & operation - PM, SO2, NOx - Cost implications?
• Selection of device - multiple device - multiple methods - difficult to inspect/training

**Certification**
- International certifications - MCERTS, TUV, USEPA etc.
- No indigenous system of certification - Indian manufacturers?
  - What is the temporary solution?
  - Permanent solution?
  - Guideline for certification?

**Accreditation**
- Huge no. of CEMS installation require network of competent laboratories
- How to accreditate the laboratory? Who?
- System of tests, accreditation, regular vigil?

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Calibration & regular check

**Calibration:** What should be the frequency?
- During installation
- Every 3/6/12 months afterwards?
- Upon major changes/repair in the devices/fuel change/operational change that may affect the device calibration
- Recalibration in case of failure of test/audit/ continuous skewed data over an hour (other than abnormal condition)

How to ensure correct calibration?

**Daily zero and span check:**
- Responsibility of industry
- Manual or online?
- Training of industry employee?
Data recording

• Mandatory % valid data availability? - 80%, 90%, 95%, 100%
• How to substitute missing data?
• Frequency of PM data? - 6 minute data
• SO$_2$ and NOx data? 15 mins data cycle
• Effluent data? Case to case basis?
  ✓ pH, temperature, flow- continuous ?
  ✓ BOD, COD, TSS, TDS, total N, total P etc.- continuous/Daily ?
  ✓ Heavy metal- daily/monthly?
• Data validity/invalidity? - CEMS Maintenance? CEMS malfunction? Abnormal condition?
• How to avoid data tempering?
Compliance check

 ✓ Similar to USEPA? EU?
 ✓ None of the data shall exceed more than 200%
 ✓ Daily average data shall not exceed 110%
 ✓ Monthly average data shall not exceed the norm
 ✓ Annual average data shall not exceed the norm

 ✓ How to differentiate in severe/moderate/low violation?
   - Severe violation - >200% exceedance in hourly average value
   - Moderate violation - 150% - 200% exceedance in hourly average value
   - Low violation - 100% - 150% exceedance in hourly average value

 ✓ Abnormal condition - during startup, shut down, CEMS failure
   - how much to allow? - 2/3/4/5% of total operating hours/year
   - to be used for compliance? to check valid data availability?
   - to be considered for EER?
   - If data not monitored, emission to be estimated for exceedance?
Reporting & requirement

✓ Frequency of compliance reporting? - 3months/6months/1 year
✓ Reporting to regulator in abnormal condition
  - How soon - within 1 hour?
  - How long to allow? If exceeds over an hour, should the plant reduce the load?
  - If not resumed by 24th hour? shall be shut down?
  - How to report on it? How detail?

Requirement

✓ SPCB to collect Bank Guarantee from the plant?
✓ Capacity building: for certification/ lab accreditation/inspection/lab inspection
  o Manpower and training- CPCB, SPCB, associated agencies?
  o Resources?
  o Timelines?