



CEMS

Issues & solution



Certification & accreditation

- 100% installation & operation- PM, SO₂, NO_x- **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?



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
- SO₂ and NO_x 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

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*
 - Manpower and training- CPCB, SPCB, associated agencies?
 - Resources?
 - Timelines?