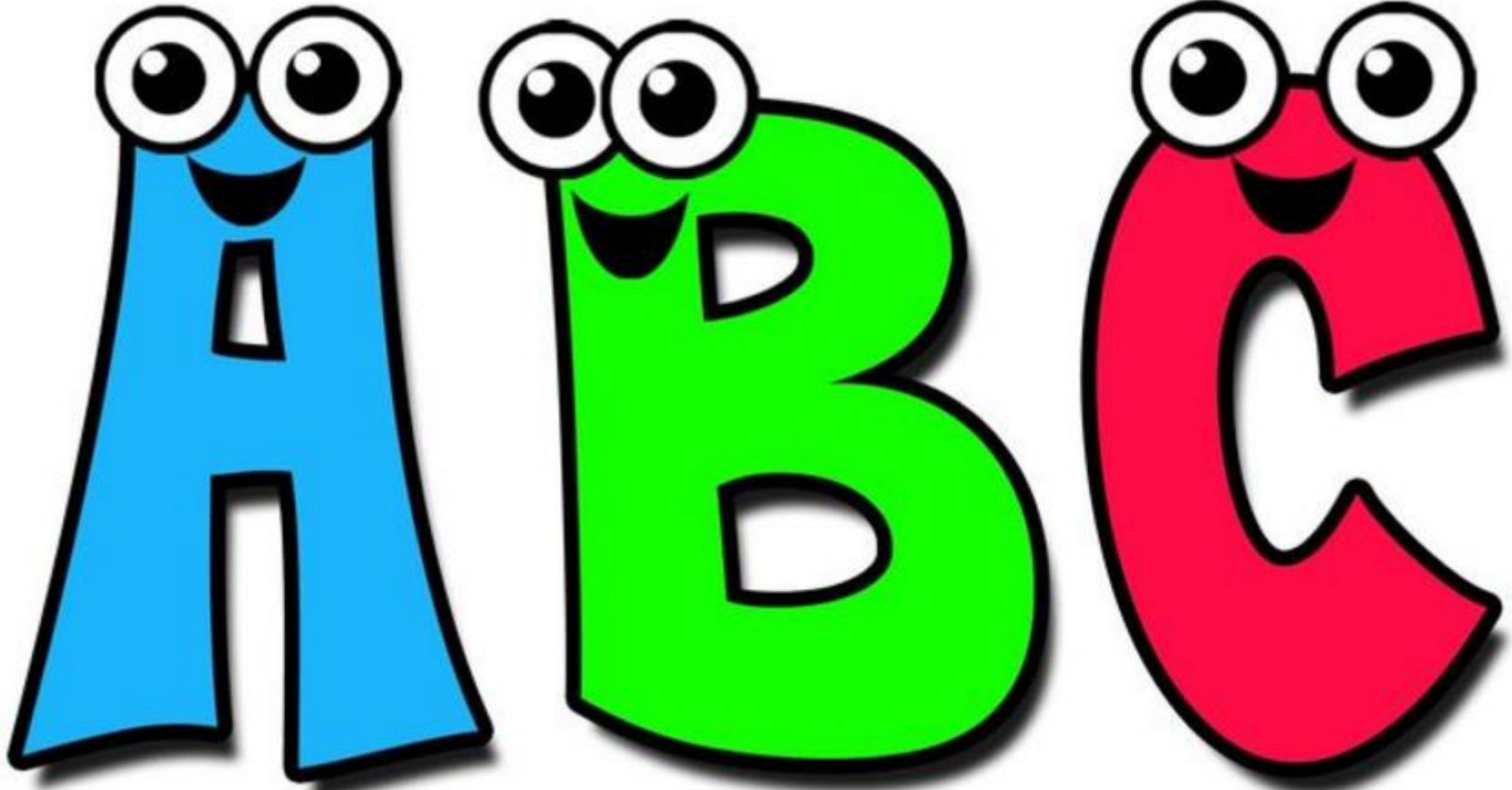




Custom Instrumentation Services Corporation

**2017 USERS GROUP PRESENTATION:  
*BASICS & BOTHERSOME  
REGULATORY TOPICS***

# BACK TO BASICS



**CERTIFICATION**

**VS.**

**RECERTIFICATION**

# CERTIFICATION

- **REQUIRED TESTS!**
  - Linearity
  - 7-Day Drift or Cal Error Test
  - CTT or CO RTT
  - DAHS Verification
  - Fuel Flow Meter Calibration
  - RATA
  - Online/Offline Determination?

# RECERTIFICATION

- **REQUIRED TESTS!**

- Probationary Calibration!
- Linearity?
- 7-Day Drift or Cal Error Test?
- CTT or CO RTT?
- DAHS Verification?
- Fuel Flow Meter Calibration
- RATA?
- Online/Offline Determination??

# TIMING ISSUES!



# **CERTIFICATION VS. RECERTIFICATION**

- **Commercial Operation date**
  - **90 Unit Operating Days/ 180 Calendar Days**
- **Probationary Calibration Date**
  - **168 Unit Operating Hours for Linearity/CTT**
  - **21 Unit Operating Days for 7-Day Drift**
  - **720 Unit Operating Days for RATA**

# CERTIFICATION VS. RECERTIFICATION (cont.)

- **Part 60 vs. Part 75 During Recert.**
  - Regulatory requirements
  - CGA/Linearity issue
- **Submittals & The Effect on Documentation**
  - Hardcopy - submittals & resubmittals
  - Electronic - submittals & resubmittals
- **Monitoring Plan Dates Are NEVER Initially Correct!!!!**



# BOTHERSOME TOPICS: OLD & NEW



# PEAKING OR PEAKING?



"I didn't want to peak too early."



# **PART 75 PEAKING UNITS**

**VS.**

## **PEAKING UNITS**

- **Operational Peaking Unit (Peaker)-A Unit that generally runs only when there is a high or peak demand.**
- **Part 75 Peaking Unit- In general, a unit that operates  $\leq 10\%$  of its annual potential (Part 72 Capacity Factor  $\leq 10\%$ )**

- **For Example: A unit with a Maximum output of 100 MW/hr. has the potential to generate 876,000 MW/yr.**
  - **100 MW/hr. \* 8760 op. hr./yr. = 876,000 MW/yr.-potential**
  - **Actual MW operated in the year = 66,750 MW/yr.-actual**
  - **CF = 66,750 / 876,000 \* 100 = 7.6%**

# CAN BAD CALS BE ERASED?



# OOPS! I MADE A BAD CAL.

- Calibrations and/or linearities that fail as a result of non-CEMS related issues, **do not get reported.**
- Examples include: Gases reversed; gases not turned on, power failure to system etc.
- Non-CEMS related calibration fails **do not necessarily** affect other QA tests like the RATA.

**EPA (via email dated 07/23/2013-  
schakenbach.john@epa.gov) indicates “If the  
auto cal was failed due to a problem unrelated  
to the CEMS, and the CEMS subsequently  
passed a calibration without any non-routine  
adjustments...the RATA does not need to be  
restarted.”**

**EPA (via email dated 09/12/2016-  
nichols.louis@epa.gov) When asked if  
non-CEMS failed linearities or calibrations  
needed to be reported, the EPA  
responded “...do not report those non-  
tests.”**



# HANDS OFF!



# I wouldn't touch that if I were you!

## Part 75 Emissions Monitoring Policy Manual – 2013

### Question 10.4

**Topic:** Hands-off Requirement for QA Testing

**Answer:** For daily calibration error tests, hands-off means that the ***zero and upscale calibrations are performed in succession, with no adjustments*** to the monitor. For linearity tests and RATAs, the hands-off requirement means that ***only routine calibration adjustments*** (as defined in Appendix B, Section 2.1.3) ***are allowed during the test***. For example, if the linearity test for a peaking unit extends over more than one day and a routine daily calibration error test is performed before completing the linearity check, the monitor may be adjusted after the daily calibration error test, but only in a routine manner (i.e., so as to match (to the extent practicable) the calibration gas tag value) ...

# MER-ACAL IN DC-Update



# **EPA ALLOWS US TO FOLLOW THEIR RULES ON FUEL SPECIFIC MER**

**EPA (via email dated 06/11/2015-  
nichols.louis@epa.gov) indicates that 40 CFR  
75.33(c)(7) &(8) does indeed allow sites to use  
fuel specific maximum emission rate (MER)  
values instead of the worse-case-scenario fuel.**

**Note DAHS must have ability to perform  
separate data substitution for each fuel.**

# INSTRUMENT AIR

## Question 9.10

**Topic:** Use of Instrument Air for Calibration

**Question:** May a utility use scrubbed instrument air, with an assumed O<sub>2</sub> concentration of 20.9% O<sub>2</sub>, for calibration of an O<sub>2</sub> monitor?

**Answer:** Yes. However, the O<sub>2</sub> monitor span must be set greater than or equal to 21.0% O<sub>2</sub>. **Furthermore, the utility must document that the conditioned gas will not contain concentrations of other gases that interfere with instrument O<sub>2</sub> readings** (a certification statement from the vendor of the gas scrubbing system or equipment will suffice). Also, in the QA/QC plan for the plant required by Appendix B, include routine maintenance and quality control procedures for ensuring that the instrument air continues to be properly cleaned.

# Interfering Effects

Some other gases are also paramagnetic and their presence in the gas stream can cause a false reading. The effect is relatively small in most cases. The table below shows the paramagnetic effect of background gases, at 20°C, in 100% concentration:

## **Interfering Gas      Interference Effect**

(100% Interferent) (% O<sub>2</sub>)

N <sub>2</sub> O	-0.20
CO <sub>2</sub>	-0.26
H <sub>2</sub> O	-0.03
Halothane	-1.93
Isoflurane	-1.97
Enflurane	-1.97
Desflurane	-2.10
Sevoflurane	-2.90
Chloroform	-1.37
Helium	0.29
NO	42.56
NO <sub>2</sub>	5.00

# FUEL FLOWMETER CALIBRATION

**EPA (via email dated 06/11/2015-  
nichols.louis@epa.gov)**

“... a orifice plate designed for a compressible fluid would provide an errant measurements with an incompressible fluid. However, the agency understands a conversion factor may exist between compressible and incompressible service and is willing to make a determination based on scientific evidence submitted for review by the manufacturer.

If you have documentation from the manufacturer of the orifice plate explaining in detail how to account for the fact that natural gas is compressible and the calibration fluid was not, the policy group would be willing to review the documentation and consider it”

# LIKE-KIND ANALYZERS

## 40 CFR 75.20(d)(2)(ii)

...A non-redundant backup analyzer, connected to the same probe and interface as a primary CEMS in order to satisfy the dual span requirements of section 2.1.1.4 or 2.1.2.4 of appendix A to this part, shall be treated in the same manner as a like-kind replacement analyzer.



# Questions?

- Thanks –

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