# Reinhold Environmental Ltd.


## 2008 APC Round Table & Expo Presentation

***July 13-15, 2008, in Savannah, GA***

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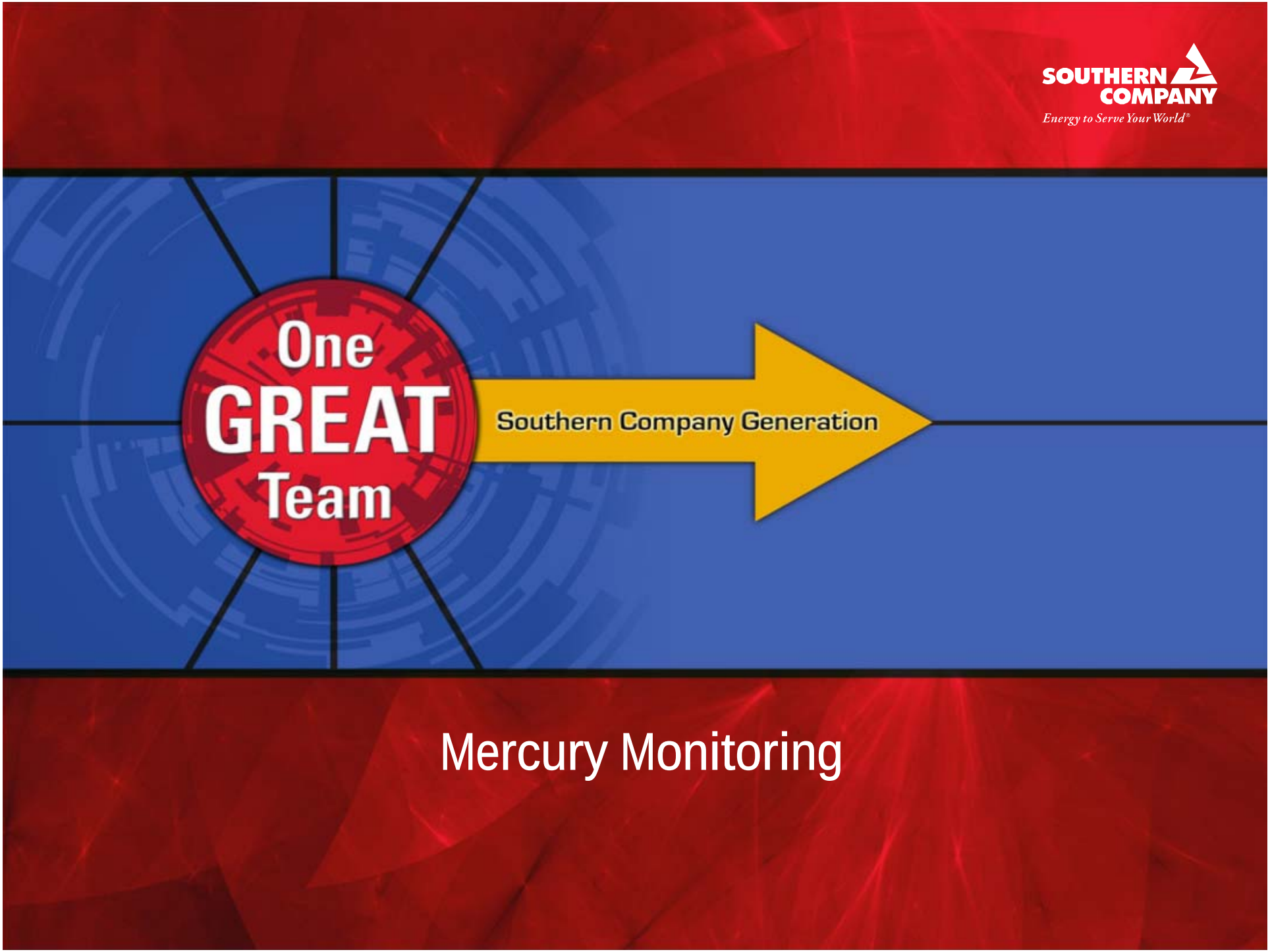


# Mercury Monitoring

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# Topics

- Impact of CAMR decision
- Experiences from calibrator testing program
- Installations, Start-up & Operating Experience

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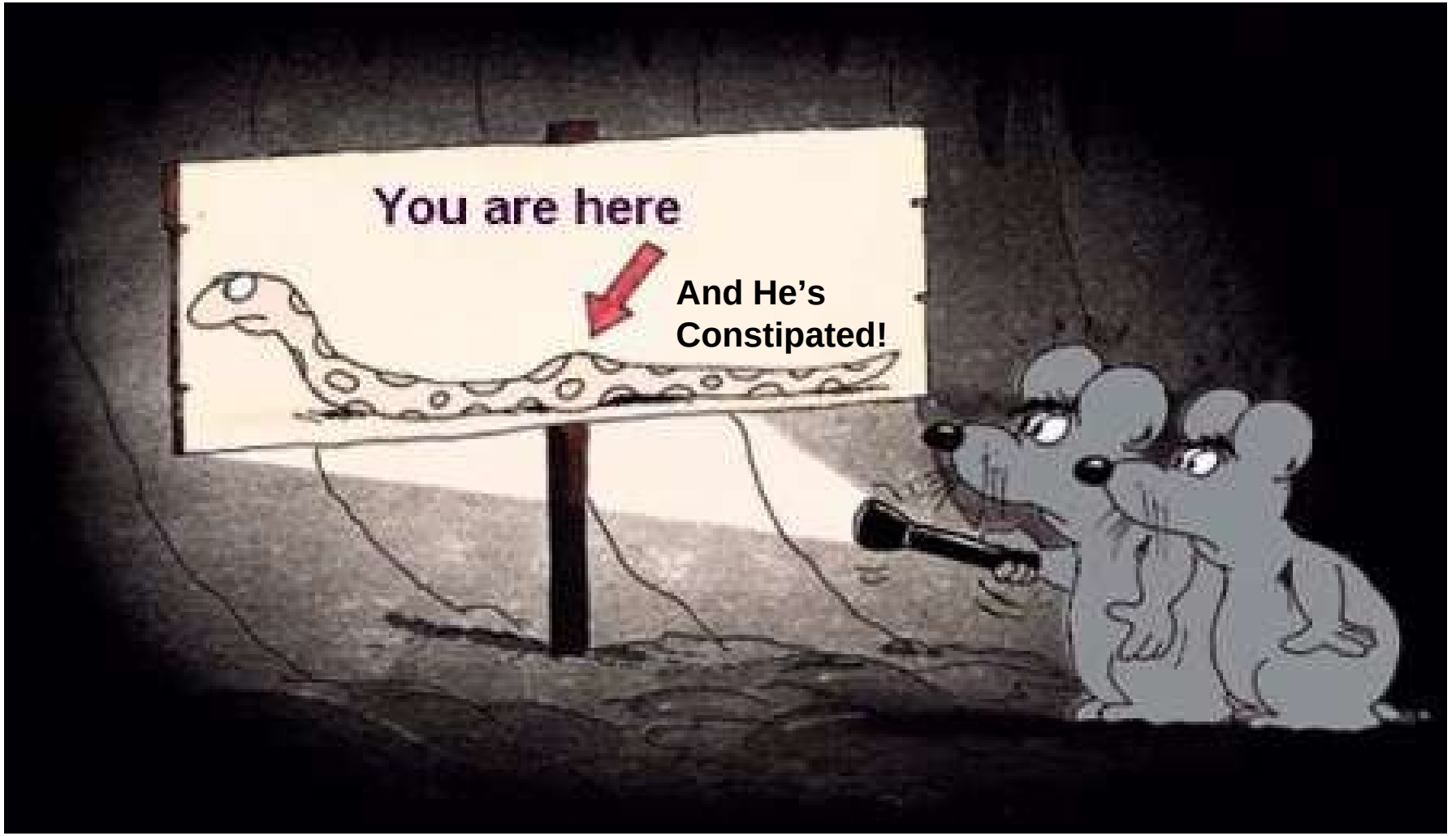
# Impact of CAMR Vacatur



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# Life in a Regulatory Vacuum – Blessing or Curse?

- Vendors – Majority of equipment already shipped or committed to, but some sales probably lost for now.
- Utilities – the “What Now” Quandary!
  - Do I mothball, sell, or operate?
  - State monitoring and reporting requirements?
  - Performance Guarantees/Certifications?
  - Resolution of equipment issues?
  - Continued Experience and Improvement?

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# Life in a Regulatory Vacuum? - Cont.

- States
  - Vacating the Rule also vacates the monitoring rules in both Parts 60 and 75. Many states with monitoring requirements were depending on the Federal Rules for certification, QA, reporting and traceability procedures.
  - To continue their monitoring programs, they will now need to promulgate there own rules.
    - Copy and Paste from what was written for CAMR or make up something?
    - Will they be receptive to discussing what is possible based on current experiences?
    - What about the missing parts?

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# Life in a Regulatory Vacuum? - Cont.

- What will EPA do?
  - Traceability Protocol
  - Appendix K
  - PS 12A
  - Methods 30A and 30B

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# CAMR Vacatur

- LOST MOMENTUM or RELIEF?

## BOTH

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# Traceability Study Field Program Overview

- Objectives:
  - to provide data on the quality and uncertainty of Hg calibrators
  - to provide data on the quality and uncertainty of certified Hg gas cylinder mixtures
  - to qualify the field certification/comparison procedures
- A side benefit will be a demonstration of the durability and stability of traceable calibrators being transported from site to site

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# Overview (cont.)

- The data collected over an extended 6 – 9 month period will be statistically evaluated for:
  - Stability
  - Repeatability
  - Variability
- This data will then be used to provide input to EPA for development of a traceability protocol

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# Field Work

- The field program involves voluntary participation from multiple end users with oversight and collaboration from EPA, EPRI, and RMB
  - field evaluation of 40 – 50 non-certified calibrators using NIST traceable calibrators
  - field evaluation of 14 - 20 NIST traceable mercury gas cylinder mixtures
- The field program was delayed during the initial part of the year due to
  - NIST traceable calibrator deliveries,
  - the Availability of cylinder gases, and
  - some stability and issues.
- The program is now well under way

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# Field Work (cont.)

- The comparative procedures use a “nesting” procedure which is performed by bracketing the candidate calibrator or cylinder measurements with measurements from a NIST traceable calibrator.
  - For the calibrator study the nesting procedure is performed at three different concentration levels defined by the NIST calibration.
  - The gas mixture study is performed at the certified gas mixture concentration.

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# Field Work (cont.)

- Each calibrator field evaluation takes approx 3-4 hours to complete.
- Each gas mixture evaluation takes approx 1-2 hours to complete
- All field data are entered into prepared spreadsheets with automated data comparisons and uploaded to RMB's secure website for QA review
- They are then posted for all parties to study and evaluate

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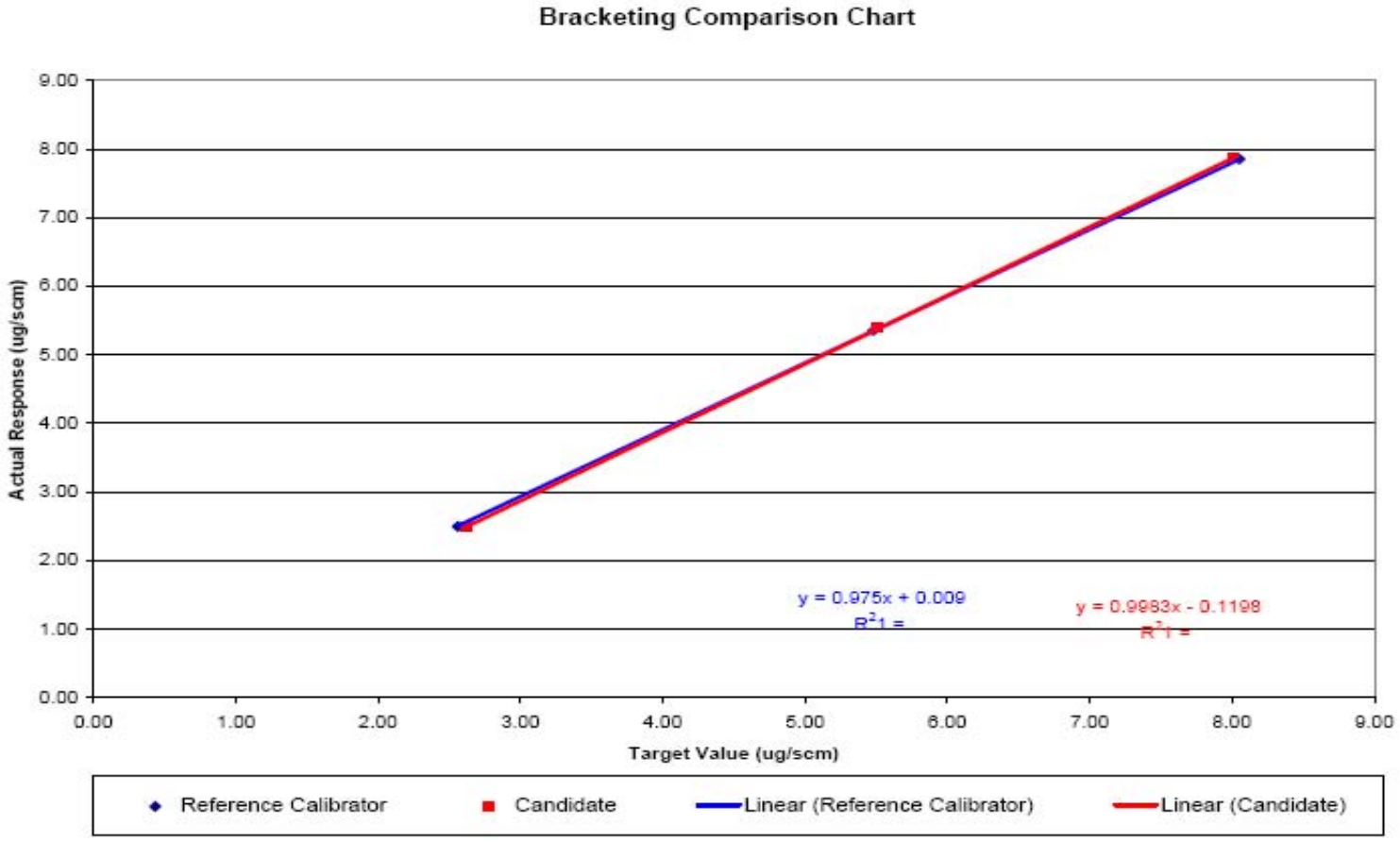
# Field Work (cont.)

## Example of Good Correlation with NIST Calibrator



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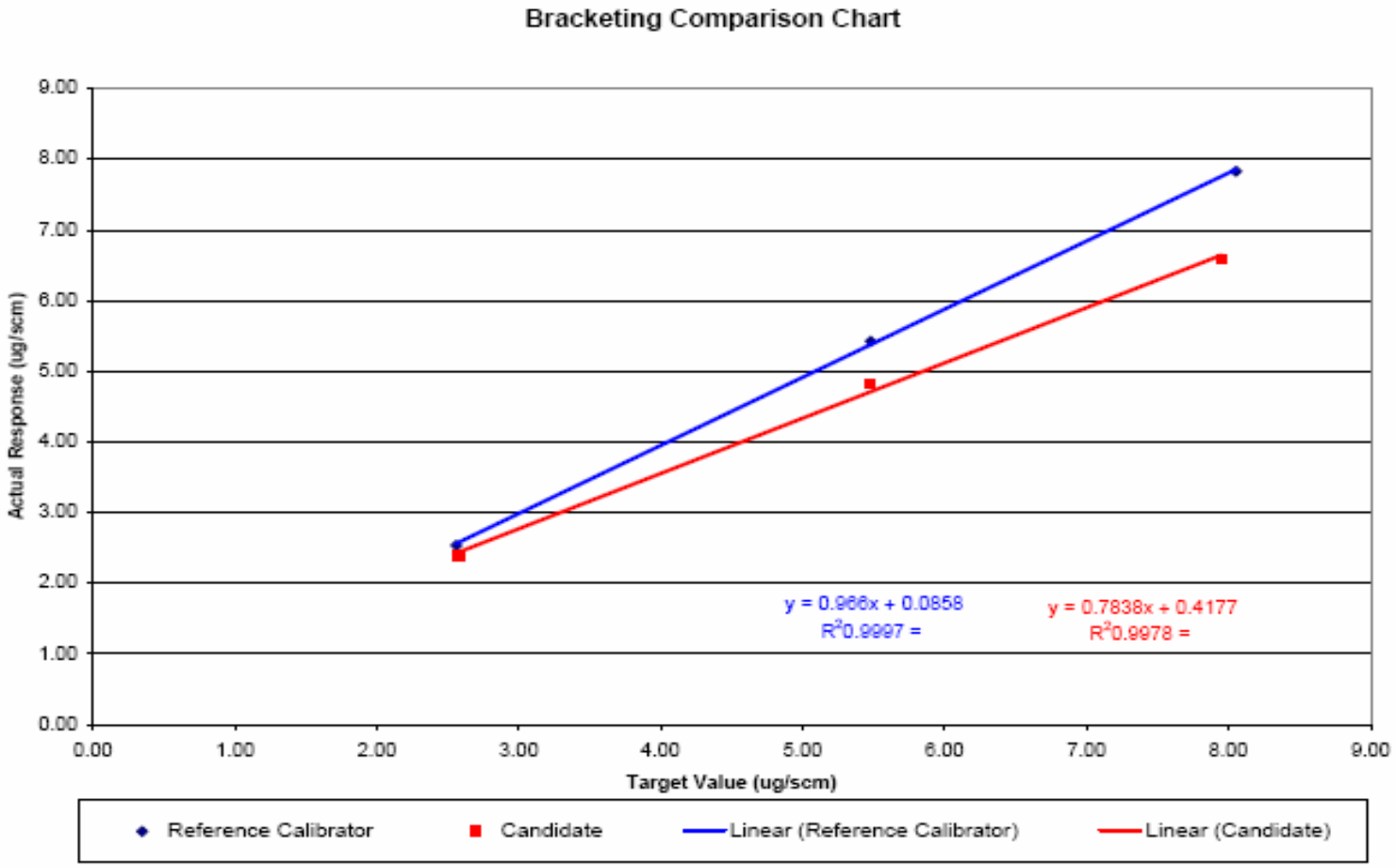
# Field Work (cont.)

## Example of Poor Correlation with NIST Calibrator



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# Traceability Study Field Program Results

- Until a statistically representative number of tests are collected and evaluated;
  - no conclusions about the applicability of the field procedures as an in-situ certification procedure;
  - or the use of certified gas mixtures as system quality indicators can be made.

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# Effect of Statistical Interpretation

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# Installations

- A total of 51 CMMS were planned (includes FGD equipment through 2010).
- Began receiving systems in March of 2007.
- To date, 36 systems have been delivered with most of the others ordered.
- Current Status by OPCO -
  - APC (21) – 13 Received, 12 Started-up, 8 Deliveries & 9 Installation/Start-ups Remaining
  - GPC (23) – 20 Received, 16 Started-up, 3 Deliveries & 5 Installation/Start-ups Remaining
  - Gulf (3) – 1 Received & Started-up, 2 Deliveries Remaining
  - MPC (4) – 2 Received, 1 Started-up, 2 Deliveries & 3 Installation/start-ups Remaining

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# Shelter Placement - Easy

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# Shelter Placement - Easy for Them

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# Installation Issues

- Hanging Umbilical's.
  - Good Times

- And Not So Good Times

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# Not So Good - Unheated

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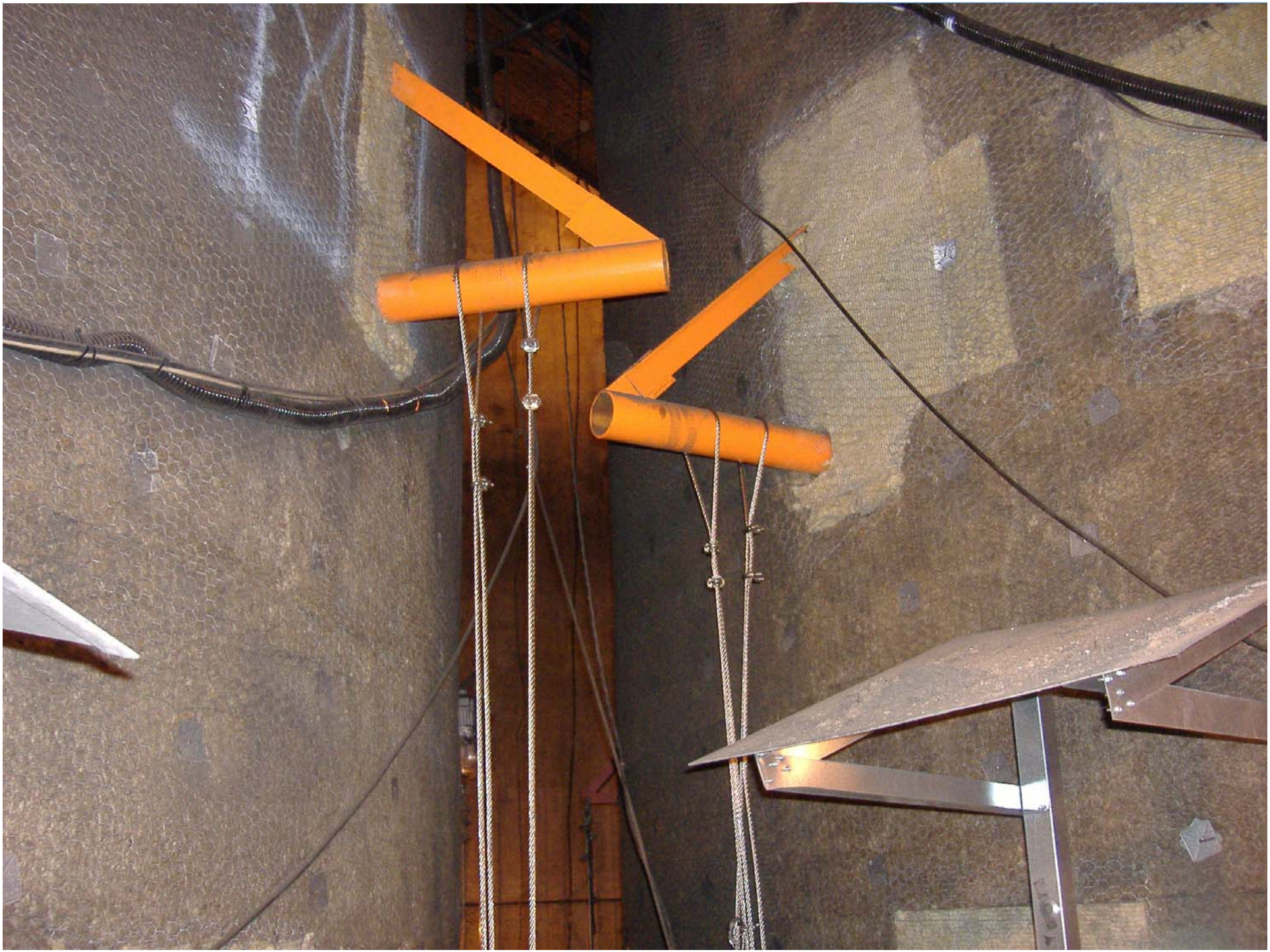
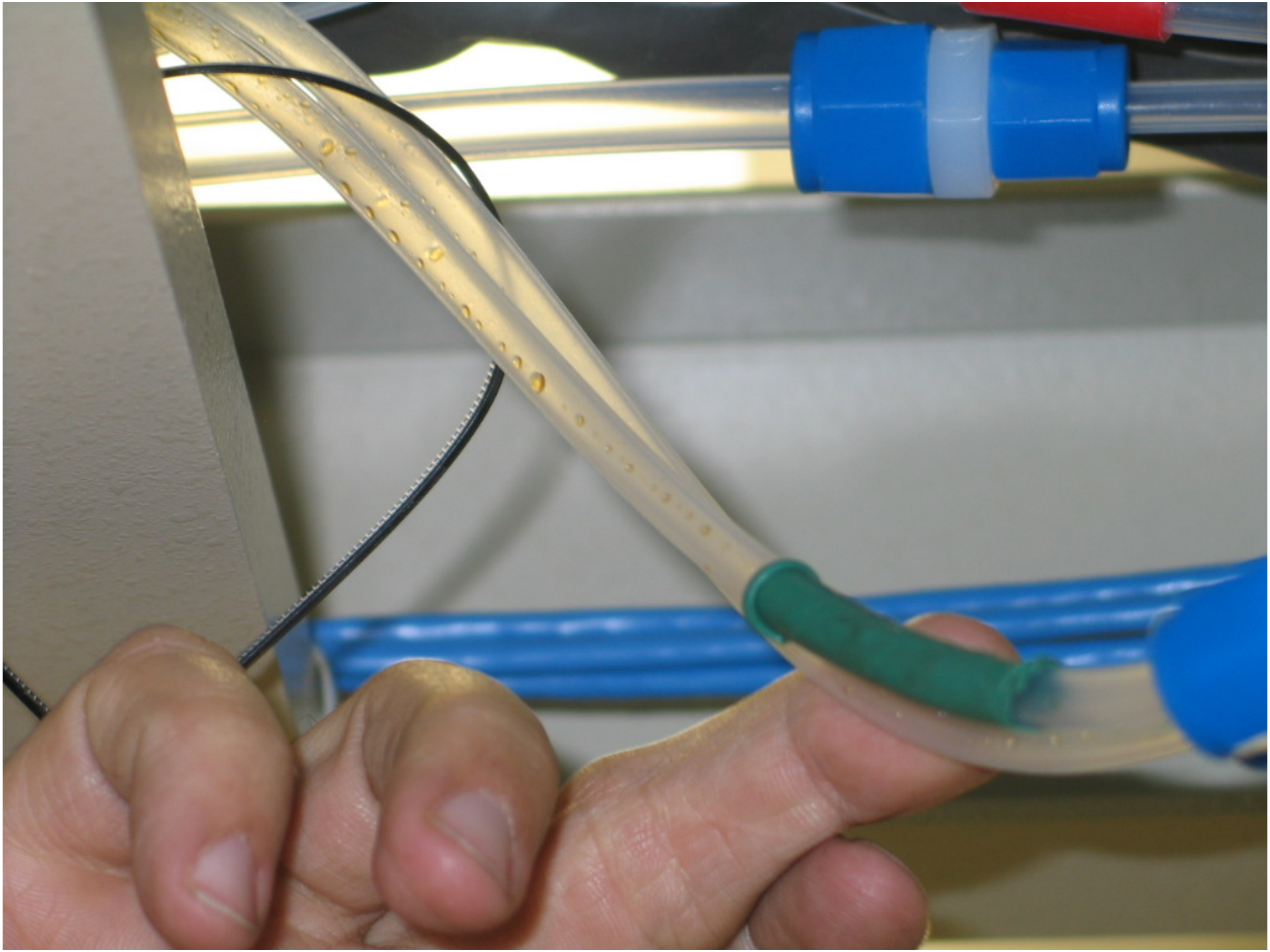
# Not So Good - Heated





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# CMMS Startups

- Actual startups times have decreased from 4 plus days down to about 2.5 days.
- Due to Vendor experience, Southern Company experience and up to date CMMS.
- Lessons learned about umbilical's.
  - Installation – Manpower, & Equipment
  - Cutting and Termination -
  - Heating up and purging prior to connection to analyzer.
- Software issues had to be corrected at each startup.  And more as upgrades occur.

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# Certifications - GPC

- 9 Completed and Passed Using EPA Method 30B
- 10 more are scheduled for the rest of 2008
- Testing issues
  - Spike Recoveries
  - Challenging Coals
  - Dry Stacks are much more challenging than the wet.

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# One Last Thought on the CAMR Vacatur


"OK, OK, OK. … Everyone just calm down and we'll try this thing one more time."