



PM CEMS In Wet Stacks  
E.ON US Operating Experience

2007 APC/PCUG Conference Center, Chattanooga, TN

# Agenda

Plant Locations

Selection Criteria

System Experiences

Summary

## Plant Locations

Mill Creek Station, Unit 3 and 4  
installed > 2 years

Ghent Station, Unit 1 and 3  
installed 1 year



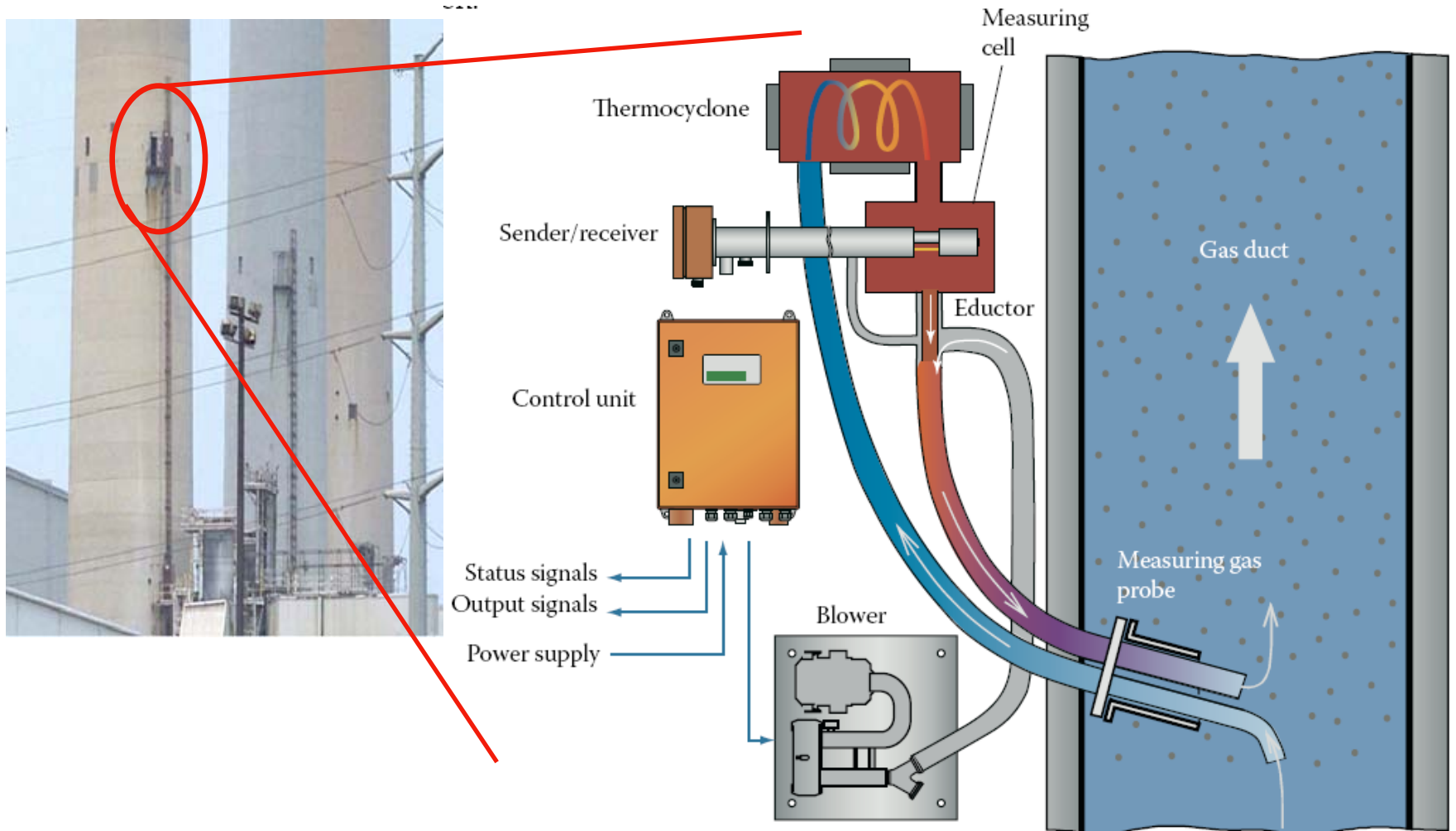
## Why we chose “scattered light” based PM CEMS

Technology is close to the “old” opacity monitors

Low capital and O&M Expenses

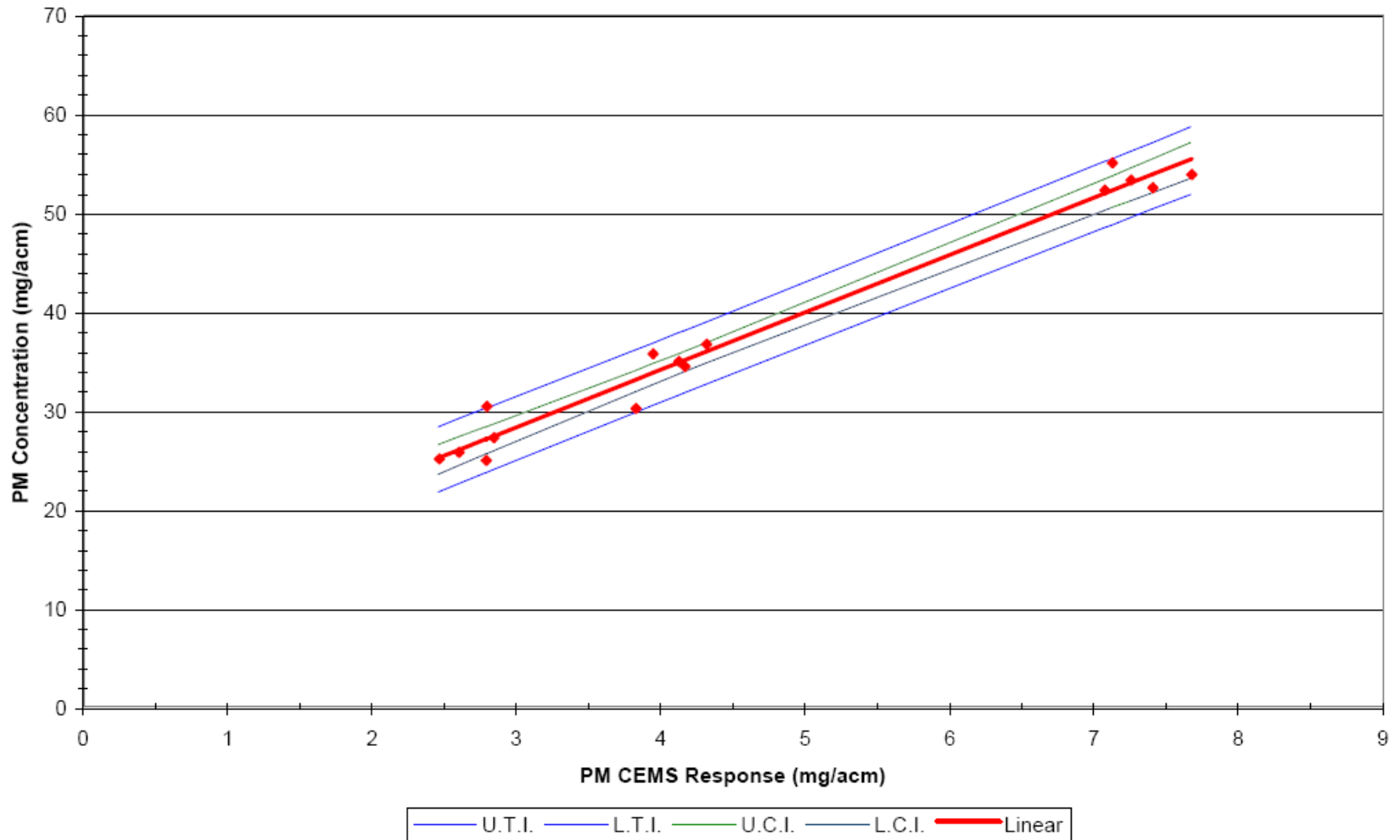
Easy installation

# Installation



# Correlation

Mill Creek Unit 4  
Initial Correlation: Sick FWE-200



## Correlation details – criteria of PS-11

Type	Correlation Coefficient	Confidence Interval	Tolerance Interval
<b>Linear</b>	<b>0.989</b>	<b>1.54 %</b>	<b>4.8 %</b>
Polynomial	0.988	2.42 %	5.3 %
Logarithmic	0.980	2.06 %	6.5 %
Exponential	0.980	1.91 %	6.0 %
Power	0.984	1.73 %	5.5 %
<b>Criteria</b>	<b><math>\geq 0.85</math></b>	<b><math>\leq 10 \%</math></b>	<b><math>\leq 25 \%</math></b>

## Operating

Procedure 2 defines the QC procedures for PM CEM

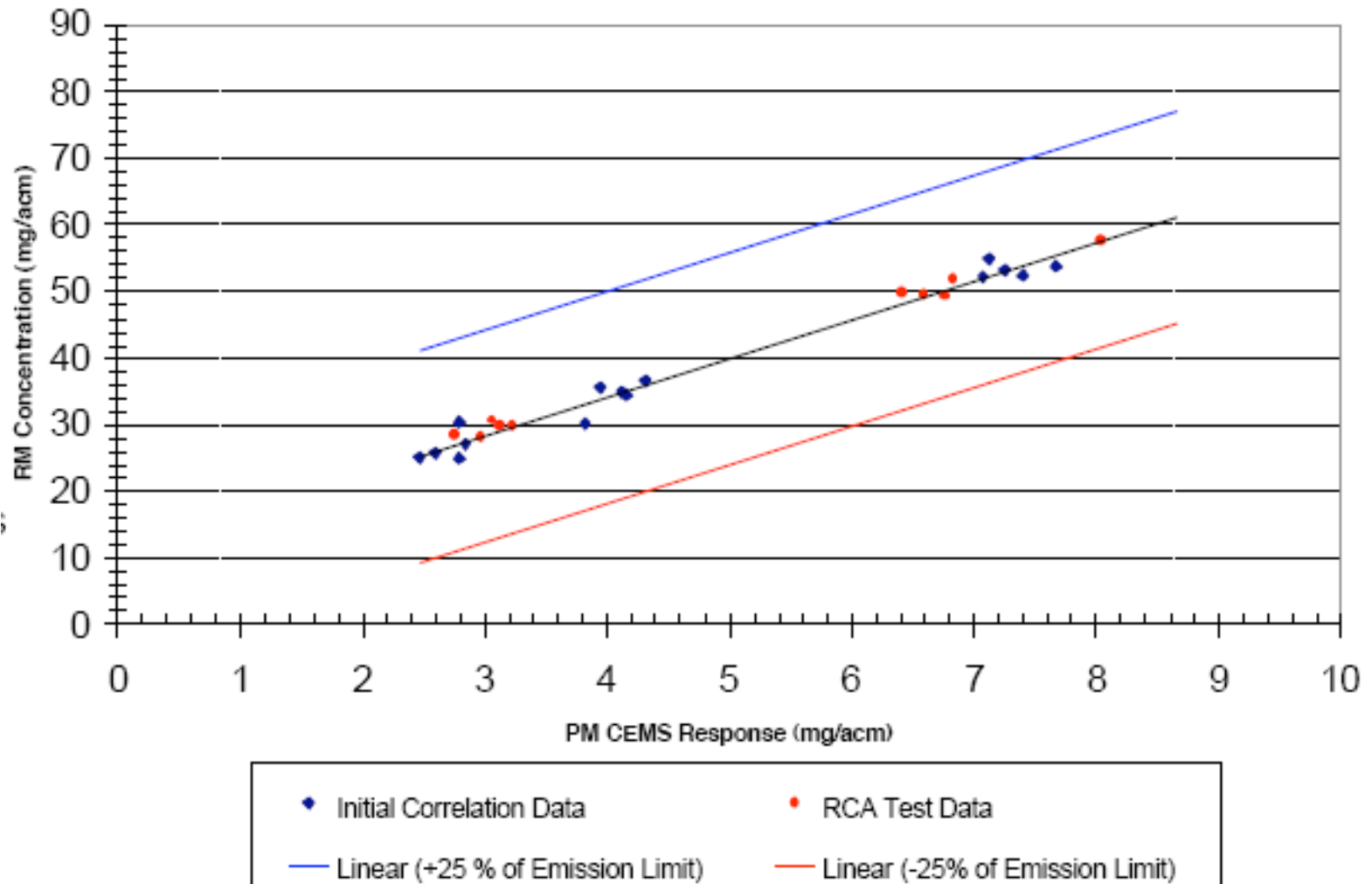
Daily drift checks – built-in control cycle

Quarterly audits – performed with a “Check Filter Set”

Procedure for full verification of correlation (RCA)



## Response Correlation Audit Summary



## Summary / Lessons Learned

- 👍 Promises kept
- 👍 Certified by EPA
- 👍 Operating and maintenance is what we thought it would be (daily drift, diagnostic software, microprocessor driven, Check Filter Set, easy to dismount)
- 👍 It is representative for our actual PM-Emissions at the stack exit
- 👍 Experience of nearly two years without bigger failures
  
- 👎 Annually and for major changes e.g. in the ductwork a re-correlation is necessary
- 👎 Training took place in Germany
- 👎 Are all spare parts available in the US?
- 👎 Only one supplier available



E.ON US

Carla Piening

Ghent Generating Station

PO Box 338

Ghent, KY 41094

T +1 (502) 347-4008

F +1 (502) 347-9903

M +1

[carla.piening@eon-us.com](mailto:carla.piening@eon-us.com)

E.ON Engineering Corp.

Dr. Peter Struckmann

E.ON Engineering Corp.

4001 Bixby Road

Groveport, OH 43125

T +1 614 830 0817

F +1 614 830 0816

M +1 614 256 8947

[peter.struckmann@eon-engineering.us](mailto:peter.struckmann@eon-engineering.us)