

# CEMS Alternatives – A Different Way: Tim Bivens Arkansas Electric Cooperative Corporation/Arkansas Environmental Federation Convention Presentation



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Tim Bivens of the Arkansas Electric Cooperative Corporation (“AECC”) undertook a presentation at the Arkansas Environmental Federation’s 50th Annual Convention and Tradeshow titled:

*CEMS Alternatives – A Different Way (“Presentation”)*

Mr. Bivens serves as a Technical Specialist at AECC.

Assorted equipment, devices, methods and tests are utilized by various stationary sources to verify the initial and/or continued proper operation of air pollution control equipment. This determination is typically based on a comparison of the amount of air pollutants the stationary source is permitted and/or projected to emit compared to the amount actually emitted. Continuous Emission Monitoring Systems (“CEMS”) are a type of stationary source monitoring that provides real time emission data.

Such a monitor may constitute an electro/mechanical device that measures the amount of pollutants passing through a facility’s stacks. The United States Environmental Protection Agency has arguably, pursuant to the mandate in the 1990 Clean Air Act amendments, promulgated regulations that have increased the use of CEMS. The installation and operation of such monitoring devices can be expensive.

By way of background, Mr. Bivens noted that AECC has operated CEMS since the 1990s. The equipment installed and operated are stated to include:

- Six CEMS
- Seven Predictive Emission Monitoring Systems (“PEMS”)

Mr. Bivens’ CEMS background has included management of the systems for AECC for 11 years and involvement with CEMS for 29 years.

Mr. Bivens noted three ways to monitor emissions, listing:

- Continuous Process Monitoring (CPM)
- CEMS
- PEMS

The *Presentation* referenced AECC's Elkins Generating Station providing an example of the facility's process instrumentation in an accompanying readout. Also discussed was the AECC McClellan Generating Station, referencing a traditional CEMS, and the Oswald Generating Station.

Advantages for utilizing PEMS were listed as:

- Initial cost same as hardware CEMS
- Lower operating cost
- Operates on existing plant control system instrumentation
- Less preventative maintenance
- Less downtime (higher reliability)

The disadvantages of PEMS were listed as:

- Lengthy process to install
- Assumes process is operating correctly downstream of the measuring device
- May require additional model training if plant conditions change
- Vendor support needed during RATAs

The requirements for PEMS were stated to include:

- Determine applicable regulation (Part 60 or 75)
- Select plant/unit inputs to monitor
- Train the models
- Statistically compare 720 hours of operation
- Submit report to EPA
- Receive EPA approval

Examples of sensor inputs were provided.

Finally, Mr. Bivens noted the PEMS QA/QC requirements which include:

- Daily – 1 validation check
- Quarterly – RAA every QA quarter
- Annually – RATA every 4 QA quarters

[A copy of the slides from Mr. Bivens' \*Presentation\* can be downloaded here.](#)