

ADA-ES Testing TOXECON II™ on PRB and Bituminous Coals

The Department of Energy has awarded ADA-ES a full-scale mercury testing program that will focus on using the EPRI-patented TOXECON II™ process to control mercury emissions from coal-fired power plants with electrostatic precipitators. The key objectives of this program are to:

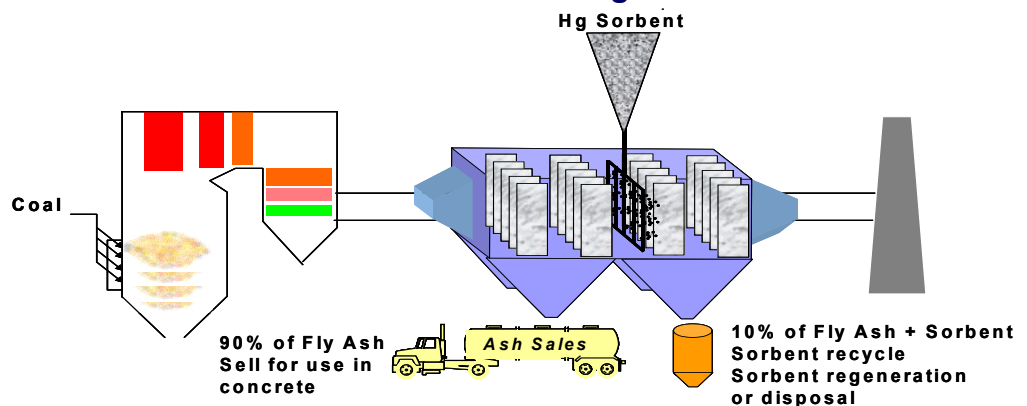
- Reduce the cost of mercury control
- Test the EPRI TOXECON II™ technology that is applicable to plants with cold-side ESPs that sell their ash
- Expand the overall industry database of knowledge about mercury removal and control systems

This project will test TOXECON II™ at AEP's Gavin plant (high-sulfur bituminous, FGD) and Entergy's Independence plant (PRB). The TOXECON II™ technology operates by injecting reagents for mercury control such as activated carbon into the back half of an ESP, leaving most of the plant's ash uncontaminated and thus saleable for use as a cement admixture. Loss of the ash sales has a significant impact on the costs of mercury control options.

Coal-fired power plants that employ ESPs represent approximately 277,000 MW or 72% of the existing coal-fired generating capacity in the U.S. These tests will evaluate:

- Minimum SCA required for effective sorbent collection
- Impact on overall particulate outlet emissions
- Injection grid design requirements
- Modifications to ESP control logic
- Achievable mercury removal rates
- Sorbent recycle potential
- Process economics

EPRI TOXECON II™ Configuration



The DOE is providing the majority of the funding for this program. Additional current support for this program includes financial commitments from the host utilities, from EPRI and from several other utilities and a coal company. The project is welcoming new participants. Project team members will be able to visit the plant test sites, learn about the planning and execution of the testing programs, receive access to early test results, interact with other utilities' key environmental personnel and see first-hand what is involved with measuring and controlling mercury emissions.

If you'd like more information on this article or participation in this DOE program, please contact Jon Barr or Dave Muggli at (303) 734-1727.

Inside this issue:

Emission Strategies Assisting Utilities with New Hg Rules	2
First Commercial Hg Control System Near Start-Up	2
NORIT Carbon Development	3
Hot-Side Hg Removal Program Awarded	4
Questionnaire	4

ADA-ES on the NASDAQ
ADES: \$15.50 on 6/8/05

52-wk Range Avg Daily Vol (3 mo)
 \$7.75—\$31.38 13,309

Emission Strategies Division Assisting Utilities with New Mercury Rules

ADA-ES' Emission Strategies division has been busy supporting the utility industry with efforts for strategic planning in response to the new federal Clean Air Mercury Rule (CAMR), finalized on March 15, 2005. The first deadline for mercury compliance by states under the federal mercury program is 2010. The Environmental Protection Agency (EPA) projects that this initial mercury control can be attained by "co-control" achieved indirectly by retrofits that address NO_x and SO₂ emissions limits required under the Clean Air Interstate Rule (CAIR).

However, individual plants will be in the position of having a cap or a trading allowance that may not be sufficient for their specific mercury emissions. Evaluation of mercury capture alternatives in the near term, including low-cost operation solutions, is key for power companies to be prepared for the new rules. Gathering mercury emission data now will enable utilities that are working with their states to have input to the individual rulemaking process.

First Commercial Mercury Control System Near Start-Up

ADA-ES is working with We Energies to design, install, operate and test the nation's first commercial mercury control system on a coal-fired utility boiler. The effort is being supported under a U.S. Department of Energy Clean Coal Power Initiative program whose objective is to evaluate EPRI's TOXECON™ process. An activated carbon injection system and a pulse-jet fabric filter will be installed downstream of existing hot-side electrostatic precipitators to control the emissions from three 90-MW boilers. The project will also investigate the capabilities of the system for trim SO₂ and NO_x control.

The system is currently under construction with completion expected by November 2005. ADA-ES will supply the activated carbon injection system and the mercury CEMs. ADA-ES will oversee technology evaluation activities at the site through 2008.

Projects begin with acquiring a clear picture of current emissions using the right measurement methods, and obtaining measurements at appropriate operating conditions. The next step in the process is to develop a list of mercury control options for each site.

Emission Strategies has been able to provide numerous companies with education/training, mercury measurements, slipstream or pilot testing, and full-scale control technology evaluation. Technologies recently tested include combustion-based mercury control (with NO_x co-control) and sorbent injection. In addition, evaluation of the potential for mercury capture in scrubbers and COHPAC II® have been conducted.

Sheila Glesmann and her team are ready to provide these and other services to your company as you begin to do your long-term pollution control planning and strategizing. Emission Strategies can provide your company with proven expertise and advice to help in this complicated process. For more information contact Sheila Glesmann at (410) 544-5292 or sheilag@adaes.com

EPRI TOXECON™ Configuration



We Energies—Presque Isle Plant

NORIT Americas Inc. Powdered Activated Carbon Development

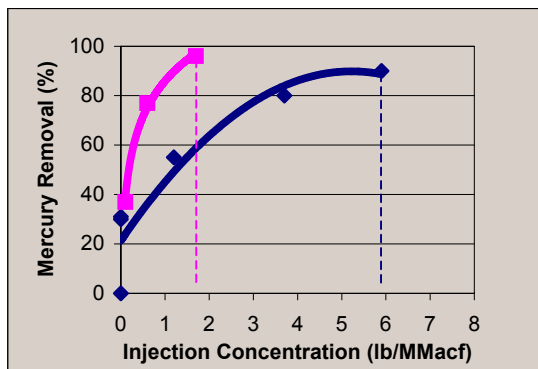
ADA-ES and NORIT Americas (the largest powdered activated carbon producer in the U.S.) have teamed to improve the effectiveness of activated carbon as a mercury control sorbent. Combining NORIT's Research and Development laboratory with ADA-ES' full-scale testing programs has led to huge improvements in the effectiveness of powdered activated carbons in removing mercury from the flue gas streams of coal-fired power plants.

NORIT's DARCO[®] Hg sorbent has been the standard carbon to which all other sorbents have been compared in a host of mercury tests. Testing showed this carbon had performance limitations on plants burning PRB coals due to the low halogen flue gas environment generated by these coals. NORIT and ADA-ES teamed to develop the DARCO[®] Hg-LH activated carbon (formerly known as DARCO[®] E-3) which is impregnated with bromine compounds. This new sorbent has been tested in several full-scale mercury programs and has achieved over 90% mercury capture in both spray dryer absorber/fabric filter and ESP-only configurations. In addition, these high capture levels have been achieved at lower injection rates than with the DARCO[®] Hg standard carbon sorbent.



The following figures present data from two recent full-scale tests showing the exciting results with the DARCO[®] Hg-LH brominated activated carbon. The two power plants were the Sunflower Electric Cooperative's Holcomb plant in Holcomb, Kansas and Ameren's Meramec plant in Arnold, Missouri. Holcomb uses a fabric filter to control particulate and a spray dryer/absorber for SO₂ control. Meramec uses an ESP to control particulate. Both plants burn PRB coals.

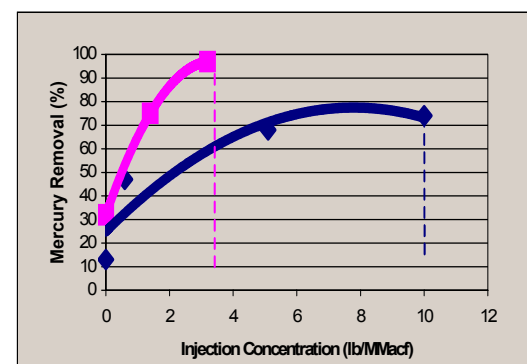
Holcomb Plant Data



LEGEND

- ◆ DARCO[®] Hg
- DARCO[®] Hg-LH

Meramec Plant Data



At the Holcomb plant, in parametric testing, the standard DARCO[®] Hg carbon reduced mercury emissions by 90% at an injection level of 6 lbs/MMacf of flue gas. In long-term testing with the DARCO[®] Hg-LH carbon, mercury emissions were reduced by over 90% at an injection level of only 1.5 lbs/MMacf.

At the Meramec plant, similar parametric results were obtained. DARCO[®] Hg removed 75% of mercury emissions at an injection level of 10 lbs/MMacf. In long-term testing with the DARCO[®] Hg-LH carbon, mercury emissions were reduced by over 90% at an injection level of only 3.3 lbs/MMacf.

NORIT is currently developing another activated carbon for the challenging flue gas conditions encountered when high-sulfur bituminous coals are burned. Certain levels of acid gases in the flue gas make mercury capture difficult, as they interfere with the carbon's ability to adsorb the mercury into its pores. NORIT and ADA-ES will test this new carbon sorbent in several high-sulfur applications next year under two DOE full-scale testing programs.

Please help us update your information by filling out the form below and either e-mailing it to solutions.newsletter@adaes.com or mailing it to our Littleton, Colorado office. Let us know how you would like to receive the biannual ADA-ES **Solutions** Newsletter and if there is anyone else in your organization who you feel should be on our mailing list, please copy this form, complete it with their information, and return it to us. Thank you for your assistance.

Name _____ Title _____

Company _____ E-Mail _____

Address _____

City/State/ZIP _____

Phone No. _____ Fax No. _____

Cell No. _____ Website _____

Please send newsletter via:

Mail E-Mail Prefer to view on Website Please remove me

Other Comments:



ADA-ES Addressing Mercury Removal for Units with Hot-Side ESPs

Under a Department of Energy Cooperative Agreement, ADA-ES will evaluate mercury removal on units with hot-side ESPs. Past and current full-scale mercury removal testing programs have not adequately addressed the hot-side ESP configuration. Limited previous testing indicates that the high flue gas temperatures of hot-side ESPs severely limit the ability of standard activated carbons to reduce mercury emissions.

There is a clear need for control technologies that provide moderate (30%-60%) mercury reductions that are low in capital and operating costs for this challenging configuration.

This project will test both non-carbon and carbon-based sorbents at MidAmerican's Council Bluffs and Louisa plants (both are PRB, hot-side ESPs). The testing will also include both solid powdered sorbents as well as liquid sorbents.

Join this project as a cost-share participant and become a team member on both site tests. As a team member, you will have a unique opportunity to get involved with a learning program that will give your organization first-hand knowledge not available anywhere else. Please call Jon Barr or Dave Muggli at (303) 734-1727 for more information.

This newsletter may contain forward-looking information within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The United States Private Securities Litigation Reform Act of 1995 provides a "safe harbor" for such forward-looking statements in this document that are based on information the Company believes reasonable, but such projections and statements involve significant uncertainties. Actual events or results -- including predicted revenues and achievement of positive cash flow -- could differ materially from those discussed in the forward-looking statements as a result of various factors including but not limited to changing market demand for ADA-ES chemicals and systems and changes in technology, laws or regulations, demand for the company's securities, and other factors discussed in the company's filing with the U.S. Securities and Exchange Commission.