This Week at NETL

September 30, 2013

Advanced Energy Systems Projects Down-Selected to Address CO_2 Emissions

Four projects under NETL's Advanced Combustion Program have been selected to continue development of advanced combustion technologies with inherent CO_2 capture. The four selections are (1) Alstom Power's limestone chemical looping combustion technology, (2) Babcock and Wilcox's iron-based coal direct chemical looping process, (3) Aerojet Rocketdyne's oxy-fired pressurized fluidized bed combustion technology, and (4) Washington University–St. Louis's staged, pressurized oxy-combustion process. The four projects will continue laboratory-scale experiments, pilot-scale evaluations, and complementary modeling to advance their respective combustion concepts. The intent is to develop technologies that can be applied to new or retrofit/repowered coal-based power plants to make a step change in progress toward DOE's carbon-capture goal: to have available for demonstration, beginning in 2025, technologies and best practices for achieving 90% carbon capture at less than a 35% increase in cost of electricity. Through these four selections, nearly $37 million—$26 million from DOE and $11 million in cost share from the participants—is being committed over 2 to 4 years to address carbon-capture issues resulting from regulations proposed by the U.S. Environmental Protection Agency to reduce CO_2 emissions.

FutureGen 2.0 Proceeds into Subphase IIc

Due to the high risk associated with the FutureGen 2.0 project, the current phase, phase II, is divided into five subphases, and the FutureGen Alliance is required to demonstrate achievement of progress before initiating the next subphase. As long as progress is evidenced before the end date of the subphase, no action from DOE is required for the Alliance to begin work covered under the following subphase. Subphase IIb ended Monday, September 16, with progress evidenced by signed power purchase agreements and submission of applications for injection well and pipeline permits. Subphase IIc runs through December 16, 2013, and required progress includes submission to DOE of completed front-end engineering design work and evidence of control of surface and subsurface rights for the planned 20-year storage.

International Oil & Gas Online Magazine Provides Positive Review of NETL Foam Cement Study

The NETL Technical Report *An Assessment of Research Needs Related to Improving Primary Cement Isolation of Formations in Deep Offshore Wells* was the focus of a favorable online review article in *World Oil*, an international trade magazine that covers the latest news and technology for the offshore and onshore oil and gas industry. The article refers to NETL's 6-month study as a "U.S.-orchestrated review of the current state of primary cement isolation of deep offshore formations . . . under the direction of the Department of Energy's (DOE) National Energy Technology Laboratory (NETL)."

Battery Storage Project Honored with Top Utility-Scale Energy Storage Innovation Award

Duke Energy's Notrees Battery Storage Project, a $44 million energy-storage project constructed with $22 million from the DOE Smart Grid Demonstration Program, received the top utility-scale energy storage innovation award at the Energy Storage North America conference and exposition held September 10–12, 2013, in San Jose, Calif. Nominees were judged on services provided to the grid, financing options, ownership model, and technology strengths. In operation since late 2012, the Notrees storage facility was procured as a turn-key operation from Texas-based Xtreme Power, which acted as the designer and installer, and is currently the facility operator. The project's 36-megawatt lead-acid-battery energy-storage system, installed at

Duke Energy's 153-megawatt Notrees wind farm near Odessa, Texas, regulates the naturally variable output from the wind farm. Batteries store energy generated by the wind turbines and then supply the stored energy back to the grid to regulate frequency and provide ancillary services for grid management. This project will play a significant role in redefining the future of advanced battery energy storage over the next 2 years of operation under the Smart Grid Demonstration Program. NETL manages this and other Smart Grid Demonstration Projects on behalf of the DOE Office of Electricity Delivery and Energy Reliability to accelerate modernization of the nation's electricity delivery system.

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