

Geology Newsletter



Virginia Board For Geology

Welcome!

The Virginia Board for Geology would like to welcome its newest member, David B. Spears.

Mr. Spears is the State Geologist for the Commonwealth. David



Spears was appointed State Geologist of Virginia in August 2009. He received his B.S. in geology from Lafayette College in 1981 and M.S. in geology from Virginia Tech in 1983. David worked as a petroleum geologist on the Gulf Coast before returning to Virginia in 1991. He is a Virginia Certified Professional Geologist who has been with the Department of Mines, Minerals and Energy for seventeen years. He has previously served as Senior Geologist, manager of the Economic Geology section, and Policy Manager for DMME. His project work has included evaluation of coal and natural gas resources, building databases of abandoned mines, and geologic mapping in the Piedmont. He is a long-time member of the Geological Society of America and Past President of the Virginia Geological Field Conference. David lives with his wife and children on a small farm in Buckingham County.

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Virginia Tech, Virginia Power propose project in Wise

Money sought for CO2 plan

A demonstration project to remove carbon dioxide from coal-fired smokestack emissions has been proposed for a controversial power plant under construction in far Southwest Virginia.

The Virginia Tech Center for Coal and Energy Research and Dominion Virginia Power announced plans August 25, 2009, to establish a \$580 million carbon-capture demonstration at Dominion Virginia Power's Virginia City Hybrid Energy Center in Wise County.

A coalition led by the Virginia Tech center has applied for federal stimulus money to offset as much as half of the cost.

"This is something a lot of people are working on—getting carbon dioxide out of the emissions stream and addressing concerns about CO2," Dominion Virginia Power spokesman Greg Edwards said in an interview August 25, 2009. "We're excited to be part of it."

Under the plan, as much as 1,500 tons of carbon dioxide would be removed from the power plant's emissions each day, converted into liquid, transported as far as 25 miles in underground pipeline to other sites and stored underground in saline formations and "thin" coal seams can't be mined.

The coalition, which includes Virginia Tech, Dominion Virginia Power, the Southern States Energy Board and others, has applied for funding from the U.S. Department of Energy's National Energy Technology Laboratory, under the federal recovery act's clean coal power initiative.

Federal officials are expected to review the funding request by November, and if approved, planning could begin by mid-2010, Edwards said. Work could begin in the carbon-capture demonstration by 2013 and be completed by 2015, he added.

Neither Edwards nor Virginia Tech officials would speculate about the project's future if the funding request is denied.

"This project will be a significant step forward in funding a viable means of controlling carbon emissions from power stations," Michael Karmis, a Virginia Tech professor who is director of the Center for Coal and Energy Research, said in a statement. "We are fortunate that Virginia has an advanced power plant and suitable injection sites in close proximity."

Nino Ripepi, a research associate with the research center, said there are no comparable projects.

"Capture is being done, but nothing has been done at this scale," Ripepi said in a phone interview. "And injecting the liquid, nothing has been done to this extent."

***1,500 tons of
plant's carbon-
dioxide output
would be
captured daily***

The identified underground storage areas represent "thousands of years" of capacity, Ripepi said.

Virginia Tech is conducting smaller-scale carbon storage experiments in Russell County.

"The carbon storage trials show a lot of promise," Edwards said. "They have been able to sequester about 95 percent of the carbon."

One goal of the project is to remove and capture a minimum of 90 percent of carbon-dioxide emissions.

The project could also produce substantial amounts of coal-bed methane, a form of natural gas that can be used as an energy source.

The demonstration project would create 36 full-time jobs, while the Virginia City power plant is expected to employ about 80. The power plant is scheduled to begin operations in 2012.

The 585-megawatt plant is designed to burn coal, waste coal and biomass. A number of environmental groups have opposed it, claiming it will further pollute the region's environment.

Earlier this month, a circuit court judge in Richmond ruled that one of two air permits issued for the plant is invalid. However, company officials said they expect the permit matter to be resolved so the plant can be completed on schedule.

*By David McGee, Media General News Service
Published in the Richmond Times-Dispatch, August 26, 2009, Page B8*

The Division of Geology and Mineral Resources—Virginia's Geological Survey

Deep within Virginia's Secretariat of Commerce and Trade resides a small, dedicated group of geoscientists – the Division of Geology and Mineral Resources (DGMR). An arm of the Department of Mines, Minerals and Energy, DGMR serves as Virginia's geological survey. Chapter 25 of Title 45.1 of the Code of Virginia sets out the Division's responsibilities and duties: to examine the geological formations of the Commonwealth and the mineral and energy resources they contain; to prepare reports and maps to describe the geology and mineral resources of the Commonwealth; to maintain repositories for representative rock and mineral samples; and to provide advice and guidance in matters regarding geological and mineral resources.

Beginning as the Geological Survey of Virginia in 1835, the division has existed under several different names over the years, including the Virginia Geological Survey, the Division of Geology, and the Division of Mineral Resources. The most recent name change was in 2008, when the Virginia General Assembly voted to add "geology" back into the division's name, giving us the "Division of Geology and Mineral Resources." Regardless of its name, the division has always toiled to meet its statutory mandate. The geology and mineral resources of Virginia are documented in hundreds of maps and reports which are used every day by the minerals industry, the oil and gas industry, land-use planners, environmental remediation specialists, water resource managers, educators, mineral collectors and the general public.

Even though the Division has suffered significant personnel reductions in recent years, important work continues. Much of the work is being carried out under cooperative agreements with various federal agencies. The U.S. Geological Survey is the largest source of these funds, contributing to no less than four projects in the division. Under the USGS STATEMAP program, new geologic mapping is being carried out in the I-81 corridor, the Richmond Metropolitan Statistical Area, and the Williamsburg-Hampton Roads area. A grant from the USGS National Geological and Geophysical Data Preservation Program is allowing the Division to catalog and archive all of its maps and data collections. A recent grant from the USGS Mineral Resources External Research Program will fund exploratory work for

concealed phosphate deposits in the Coastal Plain. An ongoing grant from the USGS National Coal Resources Data System (NCRDS) project is aimed at compiling data to assess remaining coal resources. Other federal agencies are also involved. A new grant from the Minerals Management Service will enable the Division to begin a survey of offshore sand resources available for beach replenishment. The federal Department of Energy is funding a multi-year survey of the nation's geothermal energy resources, and DGMR will lead that effort in Virginia.

DGMR's maps and publications, spanning 175 years of geologic investigations, continue to be available through the Division's Web Store (<https://www.dmme.virginia.gov/commerce/>). Traditional topographic maps of the Commonwealth at various scales are also available. A project now underway will scan all of the Division's historic publications and make them freely available online. Another initiative will enable customers to search our databases and publications through a familiar Google Maps interface. Watch the Division's web site (<http://www.dmme.virginia.gov/divisionmineralresources.shtml>) for more information.

Submitted by David Spears



Educational Rock Garden at the Division of Geology and Mineral Resources in Charlottesville, VA



Virginia Board For Geology

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David Spears—Virginia State Geologist

We're on the Web!

www.dpor.virginia.gov

Change of Address? Be sure to notify the Board office in writing!

It is a Virginia certified professional geologist's responsibility to inform the Board of a change of address. Not receiving a renewal notice does not remove the responsibility of renewal from the regulant.

Returning from Active Duty Military Service?

If your Virginia Certified Geologist certificate expired during your service outside of the United States, you have 60 days from the date of your release from Active Duty to renew your certificate without any penalty. To qualify, please send a copy of your DD-214 or other appropriate documentation to verify your active duty status to the Board for Geology at DPOR.



2011 Meetings of the Geology Board

2011

January 5, 2011, Board Room 4

April 27, 2011, Board Room 4

July 21, 2011, Board Room 3

October 26, 2011, Board Room 4

Meeting Location:

9960 Mayland Drive, Suite 200, Richmond, VA 23233