2013 REPORT OF THE

VIRGINIA COAL AND ENERGY COMMISSION

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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REPORT OF THE VIRGINIA COAL AND ENERGY COMMISSION

Executive Summary

The Coal and Energy Commission is a 20-member legislative body established by Chapter 25 (§ 30-188 et seq.) of Title 30 of the Code of Virginia. It is charged with studying all aspects of coal as an energy resource and endeavoring to stimulate, encourage, promote, and assist in the development of renewable and alternative energy resources other than petroleum.

Background and Deliberations

During the 2012 interim, the Coal and Energy Commission met twice. The focus of the Commission's deliberations during the year was the possibility of lifting the existing statutory moratorium on the mining of uranium in Virginia. At its first meeting of the interim, the Commission received a substantial report from the Uranium Working Group, a group appointed by Governor Robert F. McDonnell during 2012 and charged with providing policy analysis to the General Assembly. The Commission recommended at its second meeting of the interim that legislation be enacted to create a statutory framework for the permitting of uranium mining.

1. Meeting of December 11, 2012

The Commission held its first meeting of the interim, a joint meeting with the Uranium Mining Subcommittee, on December 11, 2012, in the Olde Dominion Agriculture Complex in Chatham. Cathie France, Deputy Director of Energy Policy at the Department of Mines, Minerals and Energy (DMME), presented the Commission with the findings of the Uranium Working Group.

The Working Group consists of staff from DMME, from the Virginia Department of Health (VDH), and from the Department of Environmental Quality (DEQ). Governor McDonnell originally directed the Working Group to

> provide a scientific policy analysis to help the General Assembly determine the regulatory framework that would be required if the moratorium on uranium mining in the Commonwealth were lifted. The UWG was not charged with making a recommendation regarding lifting the moratorium; rather, to provide the General Assembly information to aid their decision-making.[1]

In response to the Governor's direction, the Working Group produced a report that "assessed the risks and benefits of uranium mining and/or milling and evaluated what would be required in a conceptual regulatory framework if mining development were to proceed."[2] The socioeconomic study commissioned by the Working Group was

[1] Uranium Working Group, *2012 Uranium Working Group Report* (November 30, 2012), viii.
[2] *Id.*, x.

unavailable but was expected to be available by mid-January. The Working Group report is available online.[3]

Following Cathie France's presentation of the Working Group's report, Larry W. Camper, Director of the Division of Waste Management and Environmental Protection of the United States Nuclear Regulatory Commission (NRC), gave an overview of the role of the NRC in the permitting and regulation of uranium milling. Following the presentations, representatives of the Working Group and the NRC answered a small number of questions from members of the Coal and Energy Commission and a more extensive group of written questions submitted by members of the public in attendance.

Several of the questions from the public were directed to the Uranium Working Group. Cathie France and other Working Group members explained that their work is statewide in focus and makes no assessment of what might be required at Coles Hill. No specific study of the Coles Hill site exists because such a study would be the responsibility of the company applying for a mining or milling permit. The Wright Environmental Services report commissioned by the Working Group does not state what tailings storage would look like at Coles Hill because that information cannot be known until an applicant submits an application for a license detailing how it proposes to store tailings.

The Working Group reported that if the moratorium were lifted, Virginia would need to develop regulations for uranium mining. (Responsibility for regulating the milling of uranium would lie with the NRC unless Virginia became an agreement state.) General fund allocations would be necessary to begin to promulgate regulations through the Administrative Process Act (APA) and to hire the needed employees; the Working Group's recommendation is that subsequent funding for regulation would come through licensing fees and other charges to the applicant. One of the reports by Wright contains a table that cites all of the Virginia regulations that are likely to be involved in the regulation of uranium mining. Cathie France estimated that with a year of baseline data-gathering and more than a year required for the APA process, a license might be granted four or five years after the moratorium is lifted.

Baseline testing to assess current environmental conditions at a mine site would be part of an environmental review process and would examine the air, water, biota, cultural resources, and other resources, according to the Working Group. The NRC would require such testing for a full year prior to construction to provide complete baseline data. The VDH would require a year or two for the design of studies, data collection, and data analysis. Private wells also would need baseline studies and ongoing monitoring. Such work by VDH would require the granting of new authority to the agency. All water produced by a public utility, as distinguished from a private well, already undergoes testing and pre-treatment to remove naturally-occurring radiation or radionuclides.

[3] See http://www.uwg.vi.virginia.gov/pdf/UWG%20Report%20-%20FINAL%2030Nov2012.pdf.

Several questions from the public involved the protection of farms and agricultural products. Working Group members stated that food safety involves two main elements: on the farming side, the Virginia Department of Agriculture and Consumer Services would assure that all of its requirements are met, while on the human consumption side, VDH would assess reports of any problems on a case-by-case basis.

A number of attendees expressed concerns related to the financial viability of a potential applicant for a mining or milling permit. Although the Working Group report does not specifically discuss a review of an applicant's corporate track record, the General Assembly could decide to require such an analysis as part of the permit application, the Working Group reported. The Working Group recommends that agencies be authorized to check an applicant's financial stability. Virginia also would require money up front, and the Working Group recommends that an applicant pay into an emergency response fund and an environmental monitoring fund. In addition, the NRC requires financial surety in case the applicant company goes bankrupt and a third party is required to maintain the site. Examples of acceptable instruments include a surety bond, a cash bond, a certificate of deposit, a deposit of government securities, an irrevocable letter or line of credit, or a combination of such instruments. After the NRC terminates a license, the company has no further obligation. Once a tailings site goes to the custody of the Department of Energy, the Department funds that site as long as necessary.

The representatives of the NRC fielded a number of questions focusing on the milling of uranium. To begin with, the representatives noted that the NRC is neutral on the question of lifting Virginia's moratorium and the possibility of modifying the relationship between the NRC and Virginia to allow Virginia to regulate milling.

The NRC is not involved in abandoned mines and generally does not control Superfund sites, although some early sites in Utah and New Mexico, closed before current regulations were adopted, are under its control. The NRC representatives noted that most studies showing a relationship between uranium mining and ill health involve miners with lung cancer, and most studies of people living near mines involve mines that were operated with bad practices in place prior to current regulations being adopted.

Based on recent experience in licensing an active conventional mill at White Mesa in Utah and other mills, the licensing process for a mill in Virginia would likely take two and a half to three years if the moratorium were lifted, according to the NRC representatives. The applicant would have to provide one year of baseline data collection in its environmental report. Although the NRC has not entirely "turned down" an application, it has declined to accept applications and required the applicants to make changes. In some cases two or three rounds of additional questions have been put to the applicant. The NRC has not shut down any mills due to noncompliance.

The NRC representatives stated that Virginia could become an agreement state regarding milling if the Governor were to start the process by writing a letter of intent. The agreement process would take a minimum of two to three years but could occur concurrently with the review by the NRC of an application for a milling license. If Virginia became an agreement state, it could consider making rules that are more stringent than those enforced by the NRC. It could enlarge the radius for monitoring, for example, or institute a requirement that the applicant have 24-hour onsite management. The NRC would retain the authority to take the agreement back and would reexamine the agreement and operation approximately every four years to make sure that state resources are adequate and to identify problems and require corrections. Virginia's existing agreement authority over certain specified nuclear materials underwent review during 2010 and received a satisfactory grade.

Several questions from the public addressed the use of the acronyms "ALARA" ("as low as reasonably achievable") and "BMP" ("best management practice"). ALARA is an established concept in the radiation protection industry and is employed by the NRC. Thus the NRC regulatory scheme contains specific criteria but also promotes the idea that a mill operator shall make levels as low as reasonably achievable in spite of the standards. The term "BMP," on the other hand, is a term of art used by the International Atomic Energy Agency and does not translate with the same meaning to the NRC regulatory scheme. The NRC believes that its regulatory criteria represent the best practices and requires the applicant to make the case for what it is proposing for the site.

The NRC representatives were asked to compare conditions in Virginia to those of mill sites in other states. In general, because most existing sites are in the West, most will be different from Virginia. The NRC is not aware that any current applicant is addressing conditions that are clearly similar to those found in Virginia. The NRC evaluates permits on a case-by-case basis, and any Virginia license would be required to consider the area's rainfall, frequency of hurricanes, and other region-specific factors. The NRC requires an applicant to be prepared for probable maximum precipitation, which tends to be 45 inches in Virginia. (The NRC noted that the figure is 62 inches at a uranium mill site in Australia.) Although many western mills were built very close to rivers from which they could draw water, no mill site on a major river basin has been approved in recent years.

Some attendees raised questions about the possibility that a uranium mill at Coles Hill could be used to process ore mined in other parts of Virginia or other parts of the country. "Alternate feed," as the NRC representatives explained, refers to a request to allow a mill to process material from some other mining facility that has chemical and physical characteristics that are identical to those of the material for which the mill originally was approved. The NRC conducts a case-specific review of such requests under stringent criteria. If the alternate feed is not part of the initial license application, a mill operator would have to file for an amendment to the license application. If Virginia became an agreement state, it would be able to allow or prohibit the processing of alternate feed material. The NRC also discussed other processes and minerals that might

be involved in a milling application. In situ recovery only applies to specific situations, for example. Heat leaching, another method of extracting uranium from ore, is not currently used in the U.S. Although heat leaching is a viable method that is allowable under the regulations, the NRC would not know whether it is safe at a particular Virginia site until the question was evaluated. In addition to uranium, a mill can extract thorium, and the White Mesa Mill in Utah has a side circuit in vanadium.

Finally, the storage of mill tailings was a significant subject of questioning at the meeting. Representatives from the NRC explained that best practices for tailings storage have evolved considerably during recent decades; the design of a tailings cell today differs from that of the cell of the past. The first relevant regulations were issued in 1978, and groundwater standards requiring a liner did not come about until 1985. Practices have continued to evolve since then. Design elements developed since 1985 include liners; slope stability ratios; various dam formulations, including calculations of the amount of freeboard above the liquid; and protection and monitoring outside of the cell. The safest design for any given site is a site-specific determination, and an applicant would be required to characterize the site conditions and come up with the best design that meets the regulatory design criteria. Regulatory Criterion 3 states that the prime option is subsurface storage. Some partially-underground tailings storage cells exist in the U.S., such as at Piñon Ridge in Colorado. However, where certain situations exist, such as shallow groundwater, subsurface storage might not be the appropriate option, and backfilling a mine with tailings would be an option. Backfilling is the practice in open-pit mines in Canada. Regulatory Criterion 5 has two basic principles: a liner to prevent contamination from occurring and a secondary groundwater standard requiring monitoring for leaks. The licensee or permittee would be required to clean up all leaks. After milling ceased, the supervision of the mill site would be given to Virginia or the Department of Energy for long-term surveillance.

2. Meeting of January 7, 2013

At the Commission's second meeting of the interim on January 7, 2013, in Richmond, the Commission received a letter from Governor McDonnell stating that he feels he should wait for the socioeconomic report before making a final decision on the issue of uranium mining. Cathie France of DMME once more presented the report of the Uranium Working Group. After the presentation, the Commission gave opponents and proponents of the lifting of the moratorium 15 minutes each to state their positions. About five audience members spoke for each side.

After the public comments, Senator Watkins presented the following motion to the Commission:

> I move that the Commission recommend to the General Assembly that legislation be enacted that codifies a statutory framework for the permitting of uranium mining so that appropriate regulations may be promulgated by the respective state agencies.

In the discussion of the motion, Delegate Merricks asked whether the recommended statute would apply statewide or relate strictly to Coles Hill. Senator Watkins stated that it was his intent to introduce legislation that, in a general statute, would limit the ability of mining operations to be put in place anywhere in Virginia with the exception of Coles Hill.

Conclusion and Recommendations

The Commission recommended that the General Assembly enact legislation that codifies a statutory framework for the permitting of uranium mining so that the respective state agencies may promulgate appropriate regulations. The Commission adopted Senator Watkins' motion by a vote of eight General Assembly members in favor and two against. Two members, Delegate Merricks and Senator Smith, voted against the motion, and Senator Colgan abstained from voting. Delegate Onzlee Ware and Senator Wagner were not present. Of the five citizen members present, four voted in favor of the motion and one abstained.

Additional information regarding the Coal and Energy Commission's activities is available through its website at http://dls.state.va.us/cec.htm.

Respectfully submitted,

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