

Va. Mining Report Misses Mark on U.S. U-Regulation

By Nancy E. Roth, Senior Editor

A recent National Research Council panel report on the prospect of uranium mining in Virginia suggested that the state government would face “steep hurdles” in developing a trustworthy uranium-mining regulatory system. This led many readers of the report to believe that the state would not be capable of establishing a regulatory system due to its lack of experience (FCW #455, Jan. 12).

This week FCW spoke with Stephen Cohen, team leader of new facility licensing at the U.S. Nuclear Regulatory Commission, and NRC Public Affairs Officer David McIntyre, about the report’s chapter that laid out the regulatory framework for uranium mining, milling, processing and reclamation.

FCW: What is the extent of NRC’s regulatory authority over conventional uranium mines?

Steve Cohen: As far as conventional mines are concerned we don’t regulate the mining. We don’t regulate any activity until the ore enters the mill area or stockpile. 10 CFR Part 40 Appendix A, Criterion 5H discusses our requirement for minimizing the migration of radionuclides from ore into the subsurface.

For ISR [in-situ recovery mines], because there is a chemical alteration to the ore when lixiviant is injected into the subsurface, it’s considered milling underground and we exert control there. Depleted ore underground is not material we regulate.

FCW: Are there “gaps” in current laws regulating uranium mining, reclamation and long-term stewardship, as this report indicates?

Cohen: Well again, you have to make a distinction between mining and milling. I can tell you, there is no gap in conventional milling regulations. There are **multiple detailed regulations and guidance documents** on how mills are supposed to be regulated, including health and safety for milling operations, and soon to come out is a new standard review plan for reviewing applications for conventional mills and heap-leach facilities.

Conventional mills have ore crushed and ground and then leached. Heap leach mills don’t have crushing and grinding—the ore is piled on a pad and drip lines go over the heaps and release sulfuric acid to extract the uranium.

FCW: Titan Uranium’s plan for their Sheep Mountain project, which is an underground uranium mine, calls for a heap-leach facility, correct?

Cohen: Yes, and NRC did a presubmission audit onsite in October, where we reviewed that heap-leach facility.

FCW: I’m about to read an excerpt from the panel’s report and ask if it accurately characterizes the Agreement State relationship between NRC and state regulators.

“The programs of states that have signed agreements with the U.S. NRC (i.e., ‘Agreement States’) are provided technical assistance and are subject to review for their continued adequacy. Similarly, the programs of states with delegated authority from the U.S. EPA are assessed under a State Review Framework that allows EPA to consistently evaluate these programs. In contrast, some state activities, such as the regulation of uranium mining on non-federal lands, have no direct federal counterpart and therefore receive no comparable federal guidance and scrutiny.”

Cohen: When NRC signs an agreement it relinquishes Federal regulatory authority to the state, which assumes regulatory authority under state law and is then required to meet our standards. Their regulations must be equal to ours in protection. Agreement states have the responsibility, and NRC offers technical assistance if it is requested.

McIntyre: At NRC the Office of Federal and State Materials and Environmental Management Programs oversees the Agreement States and is in regular contact, at least weekly. The agreements cover anything related to our materials regulations—it’s not specific to uranium extraction. Nuclear power plants and fuel cycle facilities, like fuel-fabrication plants, always remain under NRC oversight. The agreement covers things like gauges, radiography cameras and medical isotopes and, when specified, uranium milling.

Also, an agreement state doesn’t have to take over every aspect of the regulatory program. There are 37 Agreement States, and not all have uranium milling. When they negotiate their agreement with us they may say they want NRC to continue regulating uranium milling.

New Mexico is an Agreement State, but NRC has authority over uranium milling sites there. Nebraska is another Agreement State in which NRC continues its oversight of uranium mills.

Virginia is an Agreement State in that category. Its agreement with NRC does not cover uranium-milling regulations. NRC would oversee a uranium milling project there.

Only Colorado, Illinois, Ohio, Texas, Utah and Washington have agreements in which the state has authority over uranium milling.

FCW: The U.S. has little recent experience in regulating conventional uranium processing and reclamation of uranium mines and mills, according to the report. Would you agree that the U.S is out of practice in regulating conventional uranium mining practices?

Cohen: No, I disagree. NRC staff has decades of experience licensing and regulating operating conventional mills and decommissioning numerous conventional mills. For example, our staff has worked on the White Mesa and Shootaring Canyon mills before Utah decided to take over that regulatory authority. We also have a licensed conventional mill, the Sweetwater mill in Wyoming. That's on standby but activities take place there and we do regulate and inspect it. We have sufficient experience to continue licensing conventional mills.

FCW: A key warning in the report is that all U.S. uranium mining has taken place in areas with "a negative water balance"—therefore federal agencies have "limited experience applying laws and regulations in positive water balance" environments. The panel is particularly concerned about the potential for flooded tailings impoundments.

So much of your team's application review consists of looking at groundwater issues and making sure applicants have adequate protections in place. Could this regulatory experience be relevant in a conventional mine in a moister environment?

Cohen: They appear to be stating that most of the milling has occurred out West, where there is significantly more evaporation than precipitation.

But to say our technical staff can't make a decision on mills operating in an environment where there is more precipitation than evaporation is technically unjustified.

The problems that we face with tailings impoundments are the same no matter where you put [the impoundment]. The liner has to be designed to keep the material from entering the surrounding environment—and that doesn't change whether you are in the desert or in the Piedmont area of Virginia

The second element of tailings impoundment is the cover—and that issue of containment also doesn't change depending on where you put it.

The design specifications and details of how you design a cover may vary but we absolutely have the expertise to evaluate a design and have done a fair amount of research in that area.

If Virginia Uranium submitted an application we are able to review a design for a facility in more humid environment.

FCW: The report criticizes the lack of integration and transparency of federal regulation of uranium mining activities. From your perspective, is this correct?

Cohen: As far as milling is concerned, I disagree with the notion that the NRC is not transparent. We go out of our way to see that any substantive discussion of applicant or licensee projects happens in a public meeting.

FCW: Here is what the report specifically said about NRC's public outreach:

"The U.S. NRC has a more robust approach to public participation in licensing a uranium processing facility, but there are no guarantees that pre-licensing public meetings or hearings will be held in the vicinity of the proposed facility, except in the event that an EIS (rather than simply an environmental assessment) is undertaken. ... [T]here is no evidence at present that members of the public would be included in deliberations about post-closure plans."

Is this an accurate critique of NRC's public participation process?

McIntyre: First of all, NRC would be preparing an EIS to license that site in Virginia, so there would be public meetings in the area. I don't know that we guarantee that public meetings will be near the site but we make our best efforts. Steve and other NRC staff go to [meetings in] remote areas, and ASLB [Atomic Safety and Licensing Board] does hold hearings out there.

Sometimes there are funding limitations for travel, so in those cases we try to make sure people have access via telephone or video links. Also public meetings are held in the area on scoping for the EIS and again when the draft EIS is complete. We would be going down to the location for an EIS scoping meeting in Virginia.

Cohen: When requested the staff will also travel down to the state to speak and deliver presentations, as I did on Nov. 12 at a symposium at Virginia Tech.

Regarding reclamation plans, these are discussed in the application. Certainly the public can comment on those plans, and the public can submit contentions as part of a hearing request on reclamation. In final reclamation plans, under certain circumstances the public would have a chance to comment.

For post-closure, the mill tailings impoundments are transferred to the U.S. Department of Energy for long-term care after decommissioning is completed and the specific license is terminated. DOE will care for a site under a Long-Term Surveillance Plan, which is approved by the NRC. Public input is generally not sought for these plans; however, the documents are publicly available through ADAMS.

There has to be a reclamation plan in the application, because that forms the basis of the surety applicants must put aside.