



5. MINING: Canadian firm eyes Wyo. for uranium production (08/20/2009)

Eryn Gable, special to E&E

Hoping to take advantage of the recent resurgence in uranium prices, one of the world's largest uranium producers is seeking federal approval of a proposed in-situ uranium recovery project in southern Wyoming.

Vancouver, British Columbia-based Uranium One Inc.'s project would produce yellowcake uranium, in the form of U₃O₈, that could be processed into fuel for nuclear power reactors. Under project plans, the company will develop several production wellfields that will feed a central processing plant capable of producing 2 million pounds of U₃O₈ per year.

The company is seeking permits from the Nuclear Regulatory Commission for its proposed Antelope and JAB Uranium Recovery Project, which will have an estimated 10-year mine life. The project area is located approximately 90 miles southwest of Casper, Wyo., on the eastern side of the Red Desert and adjacent to the Great Divide Basin.

The project would use in-situ recovery, in which liquids are pumped through the ground to recover the minerals out of the ore. Mining companies have promoted in-situ leaching as an environmentally benign method of mining, since there is little surface disturbance and no generation of tailings or waste rock. But environmental groups remain concerned about the potential for groundwater contamination associated with the mining method, even when it is done under strict environmental controls.

In-situ leaching has also become more economical as uranium prices have shifted upward on growing speculation about a U.S. nuclear power renaissance. Processed uranium is currently selling at about \$47 per pound, up from the average \$8 per pound in the late 1990s and early 2000s but down from market highs of about \$138 per pound.

The country's 10 domestic uranium mines produced 3.9 million pounds of uranium in 2008, 15 percent less than in 2007, according to figures from the Energy Information Administration. Total U.S. uranium consumption last year was 53.4 million pounds, with 37.2 million pounds coming from foreign suppliers.

Pros and cons

Wyoming has been the nation's leading producer of uranium ore since 1995 and also hosts the nation's largest uranium reserves.

But the recent mining boom has raised concerns among environmentalists and some regulators, particularly because of problems with groundwater contamination from past in-situ leaching projects. Last year, the Wyoming Department of Environmental Quality reached a \$1.4 million settlement with Power Resources Inc. over problems at the company's in-situ leach uranium mine, including delayed restoration of groundwater.



Shannon Anderson, an organizer with the Powder River Basin Resource Council, noted that no in-situ leaching project has ever restored groundwater to its pre-mining condition.

"Every project that's ever happened in Wyoming or Texas or wherever has contaminated groundwater supplies," Anderson said. "Most of our members get water for ranching operations and domestic supplies from groundwater, so it's a big concern for us."

Federal and state regulations do not require mining firms to restore groundwater quality to its pre-mining condition, although NRC is currently revising its groundwater restoration standards.

Anderson said she is also concerned about the effects to wildlife habitat from uranium operations, noting that in-situ operations can be more damaging than oil and gas operations because of the number of wells needed to produce and monitor the uranium.

The Nuclear Regulatory Commission is considering a proposal from the Canadian firm Uranium One Inc. to build a major in-situ uranium recovery project in Sweetwater County, Wyo. Photo courtesy of the Bureau of Land Management.

Anderson raised particular concerns about uranium mining's impacts on Wyoming's core sage grouse areas. The state is working hard to protect breeding sites and other habitat for greater sage grouse because of the bird's imperiled status. And while significant attention has been given to the effects on wind

power development on sage grouse areas, Anderson said very little is known about the effects of in-situ uranium mining on the bird or its habitat.

Mining history

Total mineable reserves for the Antelope and JAB project remain unknown, but Uranium One officials estimate that resources for the JAB project are about 4.5 million pounds, according to Chris Sattler, executive vice president for corporate development and investor relations.

There is a historical resource at Antelope, but the company is conducting exploratory drilling there in order to update the resource estimates, Sattler said.

The Antelope property was explored in the 1950s through the late 1970s by several companies. Union Carbide did extensive exploration work at the JAB site during the 1970s, but ultimately decided against pursuing a project there.

Uranium One's development plan calls for having several satellite projects in the Great Divide Basin, with each producing about 500,000 pounds of uranium a year to feed its central processing plant at Antelope.

Capital costs for the Antelope processing plant are estimated at \$35 million, and the company expects to spend \$3 million this year to drill a total of about 820 holes at the Antelope and JAB sites.

Earlier this month, the company announced a \$35 million deal to buy several uranium facilities in Wyoming's Powder River Basin, including the Irigaray in-situ recovery central processing plant. The company already has projects in the Powder River Basin that could also be developed as satellite operations with final processing through Irigaray, which could produce as much as 2.5 million pounds of U3O8 per year.

NRC, which has the regulatory authority for licensing and inspecting in-situ recovery facilities in Wyoming, announced last week that it is preparing a supplemental environmental impact statement (EIS) as part of its review of Uranium One's license application. An agency spokesperson said the SEIS should take about one year to complete.

NRC is also consulting with the Bureau of Land Management, Fish and Wildlife Service and Army Corps of Engineers and with state and tribal officials as part of its review process.

If NRC approves Uranium One's license application, the company could begin construction by the end of 2011. Construction is expected to take 12 to 18 months.

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