Cotter: Waste not

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CAÑON CITY -- Prior to 2001, the Cotter Corp.'s logo was a golden nucleus surrounded by the circular paths of orbiting electrons, a reflection of the company's long history of milling uranium at a sprawling complex just south of Cañon City.

But sometime last year, management decided that nuclear was passé and that a change was in order.

The new logo is now a forest-green nucleus surrounded by three thick arrows forming a triangle.

The international symbol for recycling.

Company officials insist that the change is merely superficial and that Cotter's future remains in processing uranium and perhaps zirconium from natural ore.

"Our agenda is not to become a disposal facility or an alternate feed facility," said Rich Ziegler, Cotter's executive vice president and a 30-year employee of the company. "Our business plan involves conventional ores."

But a number of factors suggest that Cotter's letterhead transformation is part of something much deeper.

For starters, as company officials have acknowledged, processing uranium from ore in the United States hasn't been a viable business activity since the early- to mid -1980s and the industry's future is just as gloomy.

"Conventional mining and milling production from U.S. uranium deposits is unlikely for a decade or more," James J. Graham, the chairman of Cotter's board of directors, said in a March 2002 trade-journal article he authored on the state of the nuclear power industry.

Graham concluded the article in Mining Engineering by unabashedly soliciting Cotter's services to any comers.

"Cotter is exploring new technologies to recover uranium from nontraditional sources. The company is investigating nontraditional methods of recovering uranium from Colorado's Western Slope uranium-vanadium deposits," he wrote. "And Cotter is always on the lookout for uranium production opportunities."

The most promising opportunity, according to company officials, is the development of a new process to extract zirconium.

"We were hoping that it could be 80 percent to 90 percent

Orville Kemper, right, performs maintenance work Friday at the Cotter Corp., plant just south of Cañon City. Company officials insist that Cotter's future remains in processing uranium and perhaps zirconium from natural ore, not storing radioactive waste. Times-Call /Jeff Haller

of our business," said Cotter President Richard Cherry, who is currently negotiating to acquire rights to the process from CMS Energy, the company that spearheaded the project but abandoned it earlier this summer.

According to Cherry, that is why state approval for the mill to accept 470,000 tons of contaminated soil from a Maywood, N.J., Superfund site is so critical. Without the dirt, Cotter does not have the capital to proceed with the zirconium project, he said.

But at least some of Cotter's business has already come from the mill's new ownership.

In February 2000, Commonwealth Edison, Cotter's corporate parent since 1975, sold the company and the mill to General Atomics, a La Jolla, Calif.-based company with a legacy in the design and construction of nuclear reactors and in the fabrication of nuclear fuel.

At the time of the sale, nuclear industry insiders speculated that General Atomics wanted the Cañon City property "to begin competing for processing the sizable quantities of so-called 'alternate feed material' that are becoming available from the cleanup of various government sites around the country."

"Strategically, it is a good fit for us," Graham, then the senior vice president for nuclear fuels at General Atomics, was quoted as saying in the February 2000 issue of the trade journal NuclearFuel.

Indeed it was.

At the same time General Atomics was completing the Cotter deal, it was also negotiating with the Nuclear Regulatory Commission over plan specifics for the clean-up of a uranium processing facility it owned in Gore, Okla. The Sequoyah Fuels Corp. plant -- which processed uranium oxide, or yellowcake, from mills such as Cotter into uranium hexafluoride for conversion into nuclear fuel -- was shut down in November 1992 after a series of environmental and safety violations, including a toxic explosion that killed one worker.

"Coincidental," Cherry called the timing of the deal.

"General Atomics primary interest in Cotter was that it was a viable mineral processing mill," said Cherry, who worked as the marketing manager for General Atomics subsidiary Nuclear Fuels Corp. before taking over the helm of Cotter. "The very first thing we did was to move off into zirconium processing."

However, less than a year after General Atomics bought Cotter, the Cañon City mill received its first shipment of waste from Sequoyah.

According to materials acceptance reports filed with the Colorado Department of Public Health and Environment, three shipments of uranium concentrates and sludge

arrived between Jan. 12 and Jan. 14, 2001.

One shipment consisted of three tankers, each loaded with 32,510 pounds of liquid waste, half of which was uranium. The second had five drums weighing a combined 2,800 pounds of mainly uranium waste, but which also included arsenic, beryllium, cadmium, chromium, mercury, selenium and lead.

Both these loads were mixed into thickening tanks at the mill to be processed for their uranium.

The final shipment brought 5,000 pounds of soil sludge tainted with uranium, thorium, radium and ammonia to Cotter.

Jake Jacobi, the head of the state health department's Radiation Services Program, said after Cotter submitted a lab analysis of the load for a safety evaluation, his office determined that it did not fall within Cotter's permit, and the company had to refuse the shipment.

And as a result of recent NRC rulings, even more material from Sequoyah is also now eligible for disposal

In January 2001, Sequoyah Fuels applied to the NRC to have 185,000 cubic meters of radioactive soil -- 77 percent of the clean-up at the facility -- classified as 11e(2) waste, the exact same type of uranium byproduct that Cotter is authorized to process and dispose of. Sequoyah petitioned the NRC in 1993 for the same change in classification and was denied.

In their recommendations to approve the proposal - which was ultimately approved -- NRC staff said although the plan called for on-site disposal in Oklahoma, reclassifying the waste as 11e(2) "could also lead to other remediation options."

"Mill tailings could be directly disposed in an off-site mill tailings impoundment at an existing uranium mill," without having to obtain approval from the Department of Energy or from states with low-level waste compacts, NRC staff said.

In fact, the NRC went even further.

Under federal regulations, when uranium-processing facilities such as Sequoyah are decommissioned, they are turned over to the Department of Energy. But DOE will accept them only if the entire site is under their authority.

If a site contains waste that is out of the agency's purview, such as hazardous chemicals regulated by the EPA, it could jeopardize DOE custodianship.

Because approximately 23 percent of the waste at Sequoyah fits that definition, DOE could be reluctant to take over the site, meaning the other 77 percent of the cleanup could be shipped elsewhere.

"SFC (Sequoyah Fuels) has not proposed any of these alternatives, but would have the flexibility to choose them..." the NRC recommendation said. "This flexibility may be needed if DOE is unable or unwilling to accept non -11e(2) byproduct material left on site."

According to Ziegler, if it came to that, shipping the EPA-regulated material would be the least economical option for solving the problem.

"If DOE didn't want any non-11e(2) material, it would not be cost-effective to dig up the 11e(2) material and move it. That would cost millions of dollars," he said. "It would be much cheaper to move the non-compliant material off-site and keep the 11e(2) on site."

Sequoyah aside, there is clearly enough glittering in the waste end of the uranium business to catch the eye of struggling mills such as Cotter.

Cotter recognized as much in its license renewal application, which was submitted to the state health department in December 2000.

The document includes a potential five-year production schedule, which includes projects to extract 12.2 million pounds of uranium from 275,075 tons of material, 45 percent of which would come from tailings, slag and nuclear fuel production byproducts. Projections also included another 500,000 tons of material, such as the contaminated Maywood soil, that would qualify for direct disposal in the mill's tailings impoundment.

In fact, Cotter managers recognized at the time that the Army Corps of Engineers program cleaning up the Maywood site had the potential to provide the mill with 60 percent of that waste material.

Ziegler said owners of tailings piles from around the country often call looking for a place to dispose of their waste, but that it's not fiscally smart to fill up the mill's impoundments with material that lacks substantial mineral value.

"I tell them, 'We're not in the business of disposal, but if you've got something with uranium in it, we'll consider it,' " he said. "We don't see it making sense to get into the alternate feed business."

But there's also no denying that there's virtual gold to be had by accepting others' contamination.

Before the state health department suspended all radioactive shipments into Cotter in

July, the agency approved a request by the mill to accept 35,000 tons of waste from a contaminated site on Long Island.

The so-called Li Tungsten material, which Cotter would have processed to recover small amounts of uranium before disposing of the tailings, "was just a very good

business opportunity," said Ziegler.

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