

"Alternative feed" disposal doesn't seem so difficult

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CAÑON CITY -- As the Cotter Corp. awaits a Colorado Department of Health and Environment decision on a 470,000-ton shipment of radioactive New Jersey soil -- and perhaps the company's very future - discussion about "alternate feed material" is sure to be part of the rhetoric.

Until 1978, there were no federal regulations controlling radioactive tailings from uranium and thorium mills. This, according to the NRC, "resulted in dozens of abandoned or 'orphaned' mill tailings piles."

To correct the problem, Congress that year passed the Uranium Mill Tailings Radiation Control Act, creating a new waste classification under section 11e(2) of the Atomic Energy Act. The classification defined uranium and thorium tailings as a by-product of nuclear fuel production and thus gave the NRC the ability to regulate them.

For more than a decade, the agency's oversight centered on controlling the so-called 11e(2) material on-site at uranium mills.

But in the early 1990s, with the uranium market saturated with former Soviet stockpiles and mills scrambling to stay afloat, conventional uranium business strategies took off in a new direction. Reprocessing and disposal of radioactive waste under the euphemism of "alternate feed material" became a new line of business.

In fact, as early as 1992, according to NRC documents, agency staff recognized concerns that owners of low-level or mixed radioactive waste, who were facing high cleanup and disposal costs, might find it "very attractive" to "pay a mill operator substantially less to process the material for its uranium content and dispose of the resulting 11e(2) material."

A year later, the state of Utah's Department of Environmental Quality faced that very issue. UMETCO Mineral Corp. wanted to process radioactive waste from an Oregon site at its White Mesa uranium mill near Blanding, Utah. But state officials questioned in an NRC administrative hearing whether the company's stated goal of extracting uranium was legitimate because UMETCO was also receiving a fee simply to accept the waste.

The waste was ultimately returned to Oregon unprocessed.

But the incident provided the Nuclear Regulatory Commission with added impetus to finalize draft guidelines governing how uranium and thorium mills, such as White Mesa and Cotter in Cañon City, could accept and process radioactive waste that was not defined as 11e(2) uranium and thorium tailings.

Completed in September 1995, the new "guidance" document provided a regulatory foundation for mills that once processed conventionally mined ore to begin accepting other radioactive tailings for disposal or processing them as "alternate feed material" to extract

uranium.

The guidelines main purpose, according to the NRC, was to prevent 11e(2) wastes from being mixed with other hazardous wastes, a scenario that would have led to the joint oversight of tailings piles by both the NRC and EPA. And that likely would have led to the even grimmer bureaucratic quagmire of reluctance by the Department of Energy to take custodianship of a mill when it was decommissioned.

So, under the guidelines, for a mill to accept non-uranium or non-thorium tailings for direct disposal, it had to meet nine stringent requirements, which included that the tailings not contain any other hazardous or toxic wastes.

To process "alternate feed" instead of natural ore, a mill had to show the material met three NRC criteria: It had to be tailings or other waste from which uranium or thorium had already been extracted from a licensed mill.

Like material for direct disposal, "alternate feed" also could not contain listed hazardous wastes.

And the mill operator was required to "certify under oath ... that the feed material is to be processed primarily for the recovery of uranium and for no other primary purpose."

The International Uranium Corp., which had purchased UMETCO's White Mesa Mill, employed the NRC guidelines to pioneer the concept of using alternate feed material and disposing of it. According to Congressional testimony from the company's president and chief executive, IUC had lined up deals to accept and process tailings for uranium from sites in Illinois, Nevada, Pennsylvania and Texas.

Others were also catching on to IUC's business strategy.

"For us to be competitive in the future in the U.S. uranium industry ... we must be extremely flexible to take advantage of market opportunities," John Hamrick of UMETCO told the NRC in a May 1997 hearing on uranium industry reforms, at which then-Cotter President Rich Ziegler also testified.

Reprocessing radioactive tailings, National Mining Association counsel Anthony Thompson told the NRC at another hearing a year later, "is an example of a way in which ... some DOE wastes can be disposed after you process them. Recycle them to get whatever value there is and then dispose of them in the tailings.

"It is not escaping regulation," Thompson said.

In 1998, the alternate feed policy was put to its first real test when International Uranium Corp. petitioned the NRC for, and was granted, a license amendment to allow the White Mesa Mill to accept already processed ores from a contaminated site owned by the Ashland Oil Co. in Tonawonda, N.Y.

The waste, which was being cleaned up under the Army Corps of Engineers' Formerly Utilized Sites Remedial Action Program, or FUSRAP, consisted of more than 230,000 tons of sludge and tailings from uranium milled for the Manhattan Project.

Pleading his case before a Senate Armed Services subcommittee in

September 1998, Earl Hoellen, IUC's president and CEO, said recycling uranium from the waste before disposing of it had several benefits, among them decreasing radioactivity and tailings volume and lowering the government's disposal costs.

"The residuals, or tailings, that result from alternate feedstocks are physically, chemically, and radiologically similar to existing tailings at the mill produced from the processing of conventional ores," Hoellen said.

Besides, he continued later, "the reality is that today, available disposal capacity for high-volume, low-activity uranium-bearing wastes is quite limited, and this scarcity ... is likely to continue into the foreseeable future."

To try to prevent IUC from accepting the Ashland waste, the Utah Department of Environmental Quality filed a lawsuit. State attorneys said it was clear that IUC's intent in getting the material was "primarily for payment of a disposal fee," not to process the uranium. They pointed out, according to NRC documentation, that the value of the uranium the company could recover was only a fraction of the more than \$4 million IUC stood to be paid for processing the waste.

"Processing of materials with minimal uranium content while the facility receives a large 'recycling' fee qualifies as a 'sham disposal,' " said a 1999 statement by the Utah Radiation Control Board.

Ultimately, however, an NRC administrative law judge ruled against the state in February 1999, saying that processing alternate feed material is only a sham "if it is not actually milled. If it is milled, then it is not a sham."

In other words, even if the main economic motive for accepting a waste material is disposal, that is irrelevant as long as the material is processed through a mill.

Utah appealed, but the NRC upheld the judge's decision

In its ruling, the commission said it had authority to regulate tailings and 11e(2) waste based on its radioactive content, not on factors such as whether a mill made money mainly from extracting uranium or from disposal. The commission decided that evaluating the business economics of accepting waste would put the agency in the "inappropriate role" of looking into the financial aspects of milling.

It would be, the NRC said, "an unnecessary and wasteful use of limited agency resources" for something that has "no direct bearing on safety."

Meanwhile, the uranium industry continued pressing the NRC to loosen the standards for allowing mills to directly dispose of -- without processing -- radioactive waste contaminated with other hazardous and toxic material.

Advocating for "creative use of existing disposal capacity," Hoellen told Congress that the nine criteria established by the NRC in the 1995 guidelines were "so burdensome that, in practice, it is extremely difficult, if not impossible, to dispose of non 11e(2) byproduct material in tailings impoundments."

Even though it went against the NRC guidelines, however, the

precedent had already been set for mills to process tailings contaminated with other hazardous substances.

According to NRC documents, the Department of Energy permitted a mill to dispose of tailings tainted with transformer oil that contained PCBs after the owner agreed to increase funding for additional groundwater monitoring and a promise "to pay for any problems that could arise from the mixed-waste cell."

Finally, in July 2000, the NRC consented to the uranium industry's call for more "flexibility." In a directive to staff, the commissioners changed the prohibition on accepting tailings containing hazardous and toxic substances to a policy that allowed their disposal in tailings ponds as long as there was "documentation showing necessary approval" from the EPA or states.

NRC staff began working to codify the policy into formal regulations, but ended the process in May 2001 after uranium industry officials told the agency they couldn't afford to cover the costs of the proposed rulemaking.

"Although both the staff and industry agree that the development of a new rule would be desirable..." said NRC Chairman Richard Meserve, "It is now clear that the recovery industry is unable to bear these costs in light of its precarious financial circumstances.

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