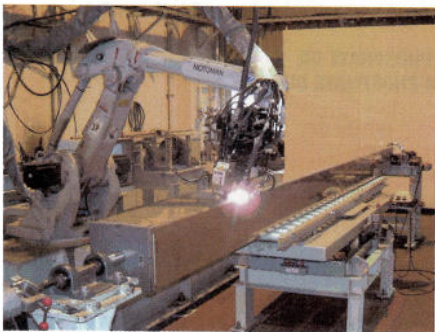


# Going Nuclear

*Ceradyne is expanding to produce components for waste containment systems for spent fuel rods generated by nuclear power plants.*

**A**s previously announced, Ceradyne, Inc. signed an agreement in June 2006 with a major aluminum manufacturer to fabricate and distribute a boron carbide/aluminum metal matrix composite (MMC). As a result of this agreement, Ceradyne Canada, Ceradyne's recently formed subsidiary, will produce state-of-the-art nuclear shielding components, which are used in nuclear waste containment systems.

The incorporation of aluminum metal with Ceradyne's boron carbide ( $B_4C$ ) powder results in a structural element or a slave material that is used in systems that effectively absorb radioactive neutrons. Ceradyne, which is responsible for the fabrication and distribution of these nuclear waste components, established an 80,000-square-foot manufacturing facility in Saguenay, Quebec, Canada, in order to process aluminum/boron carbide components using state-of-the-art extrusion or rolling technologies.

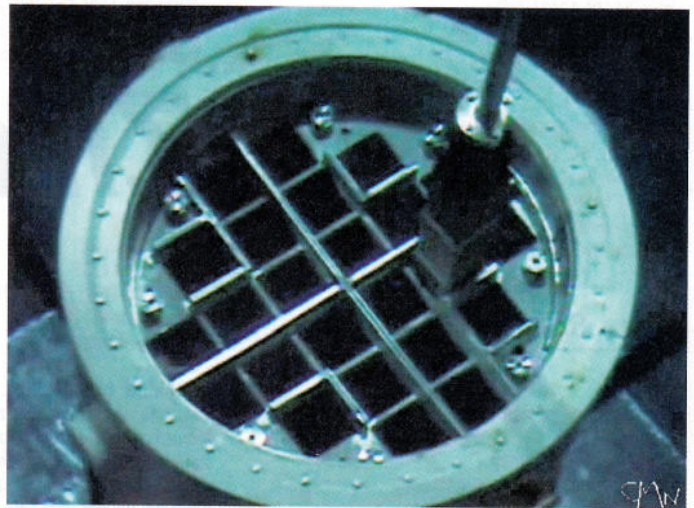


Welding a lining sleeve that holds BORAL.

Ceradyne also purchased the BORAL® line of neutron absorbing materials from AAR Manufacturing Inc. BORAL is a patented, hot-rolled composite aluminum sheet consisting of a core of uniformly distributed boron carbide and aluminum particles enclosed within layers of pure aluminum, forming a solid and effective neutron absorbing material. Well-suited to many nuclear neutron absorption applications, BORAL is used for spent fuel storage pools and dry storage dual-purpose canisters and casks. According to Ceradyne, BORAL has the longest continuous service history of any neutron absorbing material, performing its intended function for very long periods in high gamma and high neutron radiation fields.

## First Order

In September 2006, Ceradyne received its initial order for the boron carbide/aluminum MMC components from Transnuclear



The BORAL lining surrounds a spent fuel rod and contains the neutrons.

for more than \$1.5 million. The MMC components are for dry storage of spent nuclear fuel and are scheduled for delivery by the end of the second quarter of this year. The components will be integrated into Transnuclear's NUHOMS® systems, which are used by U.S. nuclear-powered utilities.

"We are very pleased with this first order, as it confirms the viability of our business strategy to not only supply BORAL and boron carbide/aluminum MMCs, but also to control all the production steps in the value stream, from the boron carbide powder to final delivery of these critical components," said Michael Kraft, Ceradyne vice president of sales, marketing and business development. "This vertically integrated capability makes Ceradyne unique and provides superior value to end customers in the nuclear waste containment market. Utilizing this capability, and in partnership with our customers, we can engineer MMCs that meet the rigorous specifications of our customers' designs. We believe in building long-term relationships and view this as an excellent start in building a major presence in this market."

## Applications

The technology will initially be focused on the market for spent nuclear fuel rods generated by nuclear power plants. However, Ceradyne also intends to develop other aluminum/ceramic MMCs for a wide range of new applications. "We look forward to expanding our line of MMCs and BORAL for neutron absorption in both wet and dry storage applications," said Kraft. ☉

For additional information, visit [www.ceradyne.com](http://www.ceradyne.com).