

Press release

Palo Alto, California – December 16, 2016

Veolia Nuclear Solutions works with Idaho National Laboratory (INL) to Demonstrate New Disposition Path for Radioactive Contaminated Reactive Metal Waste Streams

Veolia Nuclear Solutions announced the successful demonstration of their GeoMelt® In-Container Vitrification (ICV)[™] process for treatment of reactive metals. Veolia, under contract with Idaho National Laboratory (owned by the U.S. Department of Energy and managed by Battelle Energy Alliance, LLC) demonstrated safe conversion of sodium metal to a non-reactive vitrified oxide form.

The demonstration, supported by glass formulation and crucible testing, consisted of a series of ICV melts that processed elemental sodium into a stable non-reactive form. The work was carried out at Veolia Nuclear Solutions GeoMelt Test Site in Richland, WA.

[Battelle Energy Alliance, LLC](#) is evaluating the GeoMelt® technology as a means to safely and reliably convert radioactive reactive metal residues that contaminate components from sodium cooled reactors into waste forms that comply with existing disposition pathways. Reactive metal wastes at [Idaho National Laboratory](#) (INL) require treatment to comply with disposal restrictions. GeoMelt®, which is an alternative to other potential treatment approaches, provides a robust approach that chemically converts the reactive metals to an inert oxide while also immobilizing radionuclides in a vitrified waste form with durability equal to or better than vitrified nuclear fuel reprocessing wastes (very robust and inert waste forms).

“Idaho National Laboratory is working with Veolia Nuclear Solutions to investigate the applicability of vitrification for sodium metal in INL's waste and materials management,” said Robert Miklos, director of production facilities at Idaho National Laboratory's Materials and Fuels Complex. “Having a variety of options for disposition of reactive metals from sodium-cooled reactors is important as the U.S. continues to develop reactor technologies to support national energy needs.”

“Veolia Nuclear Solutions will work with INL [Materials and Fuels Complex](#) personnel to provide an environmentally safe and cost effective offsite disposal solution to reduce the amount of radioactive mixed waste stored at INL” said Brett Campbell, Director of Stabilization Business Development for Veolia Nuclear Solutions.

Battelle Energy Alliance, LLC and Veolia Nuclear Solutions are currently planning follow-on demonstration work, which is likely to focus on process optimization and radioactive testing.



Crucible Testing to Verify Glass Formulation



GeoMelt ICV Equipment Used for Demonstration Melts



Surface of Melt Processing Sodium Metal

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Veolia Nuclear Solutions is a leading world-class player in nuclear facility clean-up and treatment of low-and intermediate-level radioactive waste. It provides the most comprehensive range of technologies, expertise and services to develop the activity of facility restoration, decommissioning and treatment of low-and intermediate-level radioactive waste. www.nuclearsolutions.veolia.com

Veolia group is the global leader in optimized resource management. With over 174 000 employees worldwide, the Group designs and provides water, waste and energy management solutions that contribute to the sustainable development of communities and industries. Through its three complementary business activities, Veolia helps to develop access to resources, preserve available resources, and to replenish them. In 2015, the Veolia group supplied 100 million people with drinking water and 63 million people with wastewater service, produced 63 million megawatt hours of energy and converted 42.9 million metric tons of waste into new materials and energy. Veolia Environnement (listed on Paris Euronext: VIE) recorded consolidated revenue of €25 billion (\$30.3 billion) in 2015. www.veolia.com

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