

## Veolia Nuclear Solutions, a world-class player in nuclear facility clean-up and treatment of radioactive waste

Veolia Nuclear Solutions includes the most comprehensive range of technologies and services for facility restoration, decommissioning of plants, and the treatment of radioactive waste, all nurtured by our nuclear experts and backed by thousands of Veolia staff worldwide. Nuclear Solutions is present on the most complex sites of the nuclear industry, all over the world.

### Responding to the crisis at Fukushima Daiichi, Japan

We were among the first responders to assist TEPCO in the Fukushima tsunami recovery. We have deployed a mobile technology platform to remove radioisotopes from water streams held in hundreds of storage tanks on the site. At the reactors themselves, our Remote Access technologies

are used to inspect and repair reactor containment systems.

Veolia Nuclear Solutions' remote access activity is the undisputed leader of advanced engineering, Remote/Robotic technologies and Decommissioning/Remediation solutions for a variety of high-hazard end markets where quality and timely delivery are paramount.

### Dexter®, our remote manipulator system

Dexter® is a touch-sensitive remote manipulator system specifically designed to replicate human arms. The human operator performs tasks with the master manipulator, which the slave replicates exactly, in real time, in the remote location. The slave can be positioned up to 8km from the master because there's

no mechanical connection between the two – just cables for power and data. Our remote access solutions have been used on some of the most publicized, mission-critical projects worldwide.

### Whiteshell, a challenging case

Our experts will provide Canadian Nuclear Laboratories an integrated solution under the agreement, designing, fabricating and commissioning a system to remediate a range of intermediate, and low-level waste from in-ground concrete standpipes and bunkers at the Whiteshell site. The system deployed at Whiteshell will be using proven technologies to retrieve and sort the waste.

In addition to our remote access solutions, we also deploy or vitrifications capabilities on many sites.



Veolia's Nuclear Solutions is a leading world-class player in nuclear facility clean-up and treatment of radioactive waste.

It provides the most comprehensive range of technologies, expertises and services to develop the activity of facility restoration, decommissioning and treatment of low- and intermediate-level radioactive waste.

We propose a complete value chain for the nuclear sector and other related industries, including:

- Investigation and Characterization.
- Remote Access Solutions (Robotics).
- Separation of Radioisotopes from Waste Streams.
- Radioactive Waste Treatment.
- Stabilization of Radioactive Waste.
- Nuclear Facility Operation and Management.

[www.nuclearsolutions.veolia.com](http://www.nuclearsolutions.veolia.com)

NUCLEAR SOLUTIONS

### Geomelt®, our vitrification technologies to stabilize waste

GeoMelt® technologies are a group of vitrification processes that are configured to meet a wide range of radioactive and hazardous waste treatment and remediation needs. GeoMelt® vitrification destroys organic wastes and immobilizes radionuclides and heavy metals in an ultra-stable glass. Our GeoMelt® technologies are among the most advanced and we work with the biggest names in the industry.

### Recently, EDF and VEOLIA concluded a partnership agreement on nuclear plant decommissioning and radioactive waste processing

EDF and Veolia entered a partnership agreement to co-develop remote control solutions for dismantling gas-cooled reactors and for vitrifying radioactive waste, in France and worldwide. Veolia will thus provide EDF with its experience in remote handling technologies with a view to designing and delivering innovative solutions to access the cores of gas-cooled reactors and to cut up and extract components under optimum safety and security conditions. In parallel, EDF and Veolia will work to develop an industrial solution for the vitrification of low- and intermediate-level waste using VEOLIA's GeoMelt® technology.

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