

[Form 2 (to be reported to Committee on Countermeasures for Contaminated Water Treatment and to be disclosed to public)]

Technology Information	
Area	2 (Select the number from "Areas of Technologies Requested")
Title	Decontamination of large volumes of liquid radioactive waste from radioactive cesium and strontium by the sorption-membrane method with the solidification of the spent sorbent in a geocement compound "in situ" into the specially prepared repositories of trench type.
Submitted by	R&D Center for expertise of projects and technologies
<p>1. Overview of Technologies (features, specification, functions, owners, etc.)</p> <p>The technology is a phase-by-phase process of decontamination of LRAW with salt concentration of up to 20 g/L from radioactive isotopes of cesium and strontium with the decontamination factor of 50 by direct conditioning of the spent sorbents into a geocement compound with filling of up to 30 wt.%.</p> <p>The technology main phases:</p> <ol style="list-style-type: none"> 1. The construction of a water-proof facility of trench type (hereinafter referred to as the "pool") near the object being rehabilitated provided that all the requirements specified for special storage facilities for RAW are met. 2. LRAW pumping from the object being rehabilitated into the pool. 3. Sorption-membrane decontamination of LRAW in the pool interior space using natural sorbents. 4. Pumping of the decontaminated water from the pool into the environment. 5. Conditioning of sorbent pulps in the pool interior space into a water-resistant mineral-like compound (geocement). 6. Then all phases beginning from item 2 are repeated for layer-by-layer filling of the pool whole space with the compound. 7. The filled pool is transferred to the "Brown lawn" category provided that all the requirements specified for near-surface storage facilities are met. <p>The technology main advantage is the possibility to decontaminate large volumes of LRAW at their location sites followed by the decontaminated water return to the environment.</p>	

2. Notes (Please provide following information if possible.)
- Technology readiness level (including cases of application, not limited to nuclear industry, time line for application)

 - Challenges

 - Others (referential information on patent if any)

【Areas of Technologies Requested】

- (1) Accumulation of contaminated water (Storage Tanks, etc.)
- (2) Treatment of contaminated water (Tritium, etc.)
- (3) Removal of radioactive materials from the seawater in the harbor
- (4) Management of contaminated water inside the buildings
- (5) Management measures to block groundwater from flowing into the site
- (6) Understanding the groundwater flow