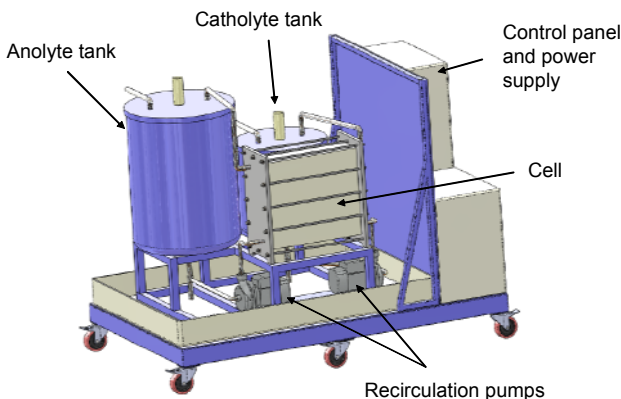


[Form 2 (to be reported to Committee on Countermeasures for Contaminated Water Treatment and to be disclosed to public)]

Technology Information	
Area	1 (Select the number from "Areas of Technologies Requested")
Title	Electrochemical treatment of spent decontaminant solutions
Submitted by	UK National Nuclear Laboratory (NNL)
<p>1. Overview of Technologies (features, specification, functions, owners, etc.)</p> <p>During removal of tanks from the Fukushima site, decontamination of the tanks will be required. Acceleration of decontamination can be achieved through the use of aggressive acids and complexants, however the residual corrosive reagent and complexants can have unacceptable consequences for downstream plant (corrosion risk and impact on abatement plant performance). For this reason the use of such reagents is limited and may limit the scope for local decontamination options. NNL along with CTech Innovation have developed a system that allows electrochemical treatment of spent decontaminant solutions to make them compatible with downstream infrastructure.</p> <div style="text-align: center;">  <p>Mobile treatment station</p> </div> <p>The system couples the option of low reagent delivery systems, which keeps the inventory of reagent down (e.g. 1 litre of reagent providing 4000 m² of droplet surface area), with an electrochemical process that removes chloride and oxidises complexants. The system also offers the option of a post-treatment step (in-line precipitation) to remove activity and other components for circumstances where tie-in to existing abatement facilities is not practicable. Tests have been undertaken on the electrochemical treatment of specific decontamination solutions and these were successfully treated to levels deemed to be acceptable for downstream abatement plant at a nuclear site.</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)

Estimated at TRL 2/3. Development towards active demonstration.

- Challenges

- Others (referential information on patent if any)

C-Tech and NNL have the patent on the technology.

【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