

[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	Treatment of contaminated water
Submitted by	Jan Persson
<p>1. Overview of Technologies (features, specification, functions, owners, etc.)</p> <p>I suggest you to construct a pipe of rubber, or steel, that is filled up with a mix of dried, fine graded peat (95%), and fine graded sand (5%). Let the contaminated water flow slowly through the "peat pipe". The radioactive isotopes, Tritium, Strontium 90, Cesium 134, 137 and Iodine 131, which are positively charged, will establish a complex with the negatively charged colloides in the peat/sand mix (mostly half decomposed <i>Sphagnum sp</i>) and therefore will be accumulated in the pipe. It could be a good idea to arrange the pipe to have a slope, so the water can sieve through by itself.</p> <p>After about 10-30 tons (depending on pipe diameter) of contaminated water has slowly sieved through the pipe the "peat pipe" is probably fully loaded with radioactive particles and must be replaced. For taking care simplicity could the pipe have couplings in each end, which make it easy to connect them, to make the pipe ring-formed, and no radioactive water will therefore leak out of the pipe afterwards. (With steel pipes, you can construct plugs to the ends, which makes it not necessary to make it ring-formed).</p> <p>You can store the pipe on a safe place later. With this treatment method you can reduce the amount of contaminated water in a substantial way, and it is cost effective too. If you are interested, I have more suggestions concerning the construction of the pipe. It is a low-tech method, but still it is a good chance that it could work out well.</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)

This is a low-tech method. You can construct the pipe with conventional technique. It could be applicated to many industries with polluted water as a by-product or just toxic waste water.

- Challenges

The challenge is how to handle the pipe and the contaminated water in a safe way, considering the radiation.

- Others (referential information on patent if any)

I have not any patent on the method described, I have not searched for patent either. I have not tested the method, and I have not heard anyone tried it before. It is a low-tech method with perhaps a new application. I hope the method can help up the situation in Fukushima.

【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