[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	Alternative Final Water Treatment System
Submitted by	The SimplyInfo.org Research Team

1. Overview of Technologies (features, specification, functions, owners, etc.)

The Alternative Final Water Treatment System acts as a secondary system and process to the current systems in use at Fukushima Daiichi. The current system of desalination, cesium removal and ALPS should continue at Fukushima Daiichi in our estimation. This provides a better containment and use of established systems that appear to be working. This is with the assumption that ALPS will eventually function and run at capacity.

Water treated through all current processes including ALPS at Fukushima Daiichi should be safely transported via a triple walled seismic rated pipeline to Fukushima Daini for final treatment and release. Daini is roughly 6 to 8 miles (9 to 12km) from Daiichi. A safe pipeline through this short distance that is currently part of the evacuation zone should be possible. Since water transported by this method would only contain tritium it should fall under less stringent regulation than if it had other isotopes contained within.

Water brought to Daini should be processed for tritium removal. Water should be then reprocessed if needed to bring it down to zero contamination before it could be either reused at Daini or released to the sea. Holding tanks used in the process should meet US NRC standards for nuclear waste water tanks at a minimum.

At Daini a series (or train) of tritium removal cooncentrator systems should be installed to treat the waste water from Fukushima Daiichi. Our suggested system uses an apparatus that concentrates the tritium into a “getter bed” eventually leaving the water decontaminated and safe for release. The entrapment media can then be stored as nuclear waste.

Please see the attachment for specifications, details of the functions of the system and diagrams.

Owners: SimplyInfo.org is the “owner” of the intellectual property of the concept. All equipment

suggested to complete the project are based on capability or adherence to technical standards. “Like for like” equipment could be exchanged to suit availability in Japan. Brands of equipment suggested are to clarify the concept. We have no affiliations of any type with the brands or companies used as representative suggestions.

2. Notes (Please provide following information if possible.)

- Technology readiness level (including cases of application, not limited to nuclear industry, time line for application)

  The suggested tritium removal system is already in use within the industry. The system may be able to be sized up and could be run in series (multiple units) to achieve sufficient daily output. Timeline for readiness of the tritium removal systems would be dependent upon the manufacturing capability of the technology supplier.

  Pipeline and storage tank systems are both standard equipment already used in the nuclear and energy sectors. No new equipment would need to be designed from the ground up for this system. An expected project completion could be six months to one year if suppliers and construction work were conducted concurrently to fabricate and install the project. This would require sufficient manpower and resources to be dedicated to the project. The biggest timeline factor would be production of the tritium concentration towers.

- Challenges

  Approvals from local government and currently displaced landowners for the pipeline could be a challenge. Since the land involved is currently part of the evacuation zone, direct risk concerns should be minimal as the area is not populated. Use of high standard triple walled pipeline, transparency of the project and proof that the project is being conducted in a safe and honest process is critical to relieve resistance. The pipeline, storage and processing project would pose fewer risks to the area population and local fisheries than the current plan of dumping tritium laced water into the sea by mixing it with clean water to meet release levels. This lower risk should help gain local approval as a better solution to the dilution and release plan that has been rejected locally.

To fully gain public approval and to have full transparency of the project, local governments, fishing cooperatives and 3rd party citizen environmental groups should be allowed to conduct their own testing of the decontaminated waters to be released. This kind of consensus and oversight can overcome concerns about accuracy and safety.

- Others (referential information on patent if any)
  There is currently no patent on the concept proposed here. Representative suggestions of brands or types of equipment may be subject to their own patents with the manufacturer.

3.

【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