

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

Technology Information	
Area	2. Treatment of Contaminated water
Title	Control of Tritium Levels
Submitted by	Atomic Energy of Canada Ltd.
<p>1. Overview of Technologies (features, specification, functions, owners, etc.)</p> <p>Atomic Energy of Canada Limited can provide support for controlling tritium levels of water originating from the Advanced Liquid Processing System (ALPS) at Fukushima Daiichi. AECL, through its decades of experience in the area of technology development for tritium management (measurement and control) in heavy water for CANDU reactors and light water purification has accumulated capabilities in Liquid Phase Catalytic Exchange (LPCE), Electrolysis, Combined Electrolysis and Catalytic Exchange (CECE), Bithermal Hydrogen-Water Cryogenic Distillation. AECL has also developed a wide range of proprietary technologies to measure, handle, separate and store tritium. The CECE process for tritium removal and the bithermal hydrogen-water process for deuterium enrichment have been demonstrated by AECL at scales that are relevant for large-scale applications. A number of feasibility studies and preliminary designs for Light Water Detritiation (LWDT) for different applications have also been produced. AECL can conduct a comparative study in the application of the above processes to reduce the tritium concentration from the levels currently experienced at Fukushima Daiichi ($\sim 5 \times 10^6$ Bq/L) to levels suitable for discharge to the environment. AECL would consider partnering with a suitable engineering company for an economic analyses, feasibility studies and deployment of a suitable technology for detritiating and discharging the water currently stored in tanks.</p>	

