RESULTS OF THE PROJECT

One ALPS™ unit includes three operating lines, each with a nominal capacity of 250 m³/day. During timespan March 2013-June 17, 2014 over 92,000 m³ was treated in ALPS 1. Cesium and strontium activity was below detection level. This was possible due to the extremely high selectivity for Sr and Cs. Decontamination factors might be the highest ever in the nuclear industry, over 8.3 million for Cs with CsTreat® and over 165 million for Sr with the combination of precipitation and SrTreat®.

DESCRIPTION OF THE PROJECT

On average 300 m³ of water leaks daily into buildings at the Fukushima Daiichi Nuclear Power Plant and gets contaminated from the damaged reactor cores. Water is purified with reverse osmosis (RO) and the purified water is used to cool the damaged cores.

ALPS™ was designed by EnergySolutions and constructed by Toshiba to treat the RO concentrates. ALPS™ uses CsTreat® and SrTreat® to remove cesium and strontium to non-detectable levels. Project was started 2012 and is ongoing. Two ALPS units have been constructed and are in still in use in 2017.

Location: Fukushima Daiichi, Japan

Surrounding water environment: Pacific Ocean

System: Advanced Liquid Processing System ALPS™

Operation period: 2012- (continues)

Cesium and strontium removal in ALPS systems, since 2012-

(continues)

NURES® ion exchange medias CsTreat® and SrTreat® are used in Advanced Liquid Processing System (ALPS™) which purifies radioactive liquids at Fukushima. Two ALPS units are currently used to clean contaminated water. 62 contaminants are removed, including strontium and cesium.

Power Plant: Fukushima Dai-ichi

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