



Media Release

1 April 2008

Aussie Synroc Technology Signed Up in US\$1.4 Million Deal

ANSTO's* Synroc technology is to be demonstrated as a way to clean up radioactive waste at the United States (US) Idaho National Laboratory.

Dr George Collins, ANSTO's Chief of Research, said a US\$1.4 million deal was signed between ANSTO Inc (ANSTO's US arm) and Battelle Energy Alliance - the management and operating contractor for the Idaho National Laboratory - to demonstrate the benefits of Synroc technology in treating waste stored at the site.

"ANSTO will provide a demonstration of how to immobilise a range of legacy wastes, using hot isostatic pressing (HIP), a technology which ANSTO applies to the cleanup of radioactive waste," said Dr Collins.

One waste of particular interest is referred to as calcine. The Idaho National Laboratory has around 4,400 cubic meters of radioactive calcine material arising from the reprocessing of spent naval fuel, which is in a powder form not unlike laundry detergent.

"For this waste, two alternative methods will be demonstrated – one simply HIPping the calcine, the other HIPping a calcine-synroc mix. During the demonstration phase, no radioactive material will be handled with many of the tests to take place in Australia, at ANSTO," he said.

"HIP places high heat and pressure evenly around an object to solidify the contents and reduce its size by up to a half, ready for storage," explained Dr Collins. "In this case, the object will be steel cans filled with radioactive waste, either the calcines as currently stored at the Idaho Lab or calcines mixed into a special powder using ANSTO's synroc technology.

"The synroc process is designed to produce a product which will last for hundreds of thousands of years without breaking down, which is important for the storage of highly radioactive material," he said.

Once the cans and its contents are compacted and reduced in size, they would be placed in specially shielded containers and safely stored in a specially designed nuclear waste storage facility.

In an agreement with the State of Idaho, the United States Department of Energy must have the radioactive calcine material 'road ready' by the end of 2035 so it can be disposed of at another site - possibly the planned Yucca Mountain geological repository in Nevada.

"This is a great opportunity for ANSTO to demonstrate its expertise in preparing radioactive material for long-term storage," concluded Dr Collins.

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