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SRS Environmental Bioassay Laboratory Support Aids Japan

AIKEN, SC— On March 11, 2011, an earthquake and a tsunami wave triggered a string of disasters in Japan that created an outpouring of relief efforts to assist the Japanese people.

The Savannah River Site's Environmental Bioassay Laboratory (EBL) was one U.S. asset that played a key role in the Department of Energy Consequence Management Home Team's (CMHT) response to assist the Government of Japan, by analyzing soil and air filter samples for radiological contaminants related to the Fukushima Daiichi reactor incident. The EBL is one of the first SRS capabilities to play a specific role in the Japan effort.

"The staff at the Environmental Bioassay Laboratory is trained to perform this kind of emergency work smoothly and rapidly, and they've demonstrated that we have an asset that can provide high quality analytical work when it's needed," said David Moody, DOE-Savannah River Manager. "Their service helped both the United States and Japanese governments have quick access to important radiological data."

"We have a number of other people – particularly some of the scientists at the Savannah River National Laboratory – whose professional expertise has helped to define how the U.S. may be able to assist," Moody added. "Going forward, I expect that SRS has specific skills, like our understanding of the technology associated with long-term cleanup, remediation and monitoring in a nuclear environment, that will be very pertinent to the recovery effort that's ahead."



SRNS Chemist prepares soil sample for radiological analysis.

The primary objectives of the CMHT's sample collection, sample analysis, and data assessment teams were to evaluate personnel exposure hazards, identify the nuclear power plant radiological source term and plume deposition, and assist the Government of Japan in assessing any environmental and agricultural impacts associated with the nuclear event. CMHT personnel and the Japanese government collected the samples for analysis and shipped them to the Savannah River Site for analysis.

The Environmental Bioassay Lab analyzed approximately 250 samples and reported approximately 500 analytical method determinations. Samples sent to the EBL were primarily soil samples from farmland surrounding the Fukushima reactors or air monitoring samples of national interest, including those collected at the U.S. Embassy and American military bases. Since the soil samples were from Japan and might contain foreign microbes, they had to be processed, treated, and analyzed under a special permit from the United States Department of Agriculture. Samples were analyzed for a wide range of radionuclides, including strontium-89, strontium-90, gamma-emitting radionuclides, and plutonium, uranium, americium and curium isotopes. The rapid reporting of high quality analytical data was critical to allow the government of Japan and CMHT to evaluate radiological impacts from the nuclear reactor incident to both personnel and the environment.

The Environmental Bioassay Lab was selected as one of four laboratories nationally to perform these sample analyses due to its expertise in rapid analytical methods for radiological contaminants in environmental samples. The Lab was contacted via Lawrence Livermore National Lab, because of its membership in the National Analytical Management Program, a DOE-sponsored organization that coordinates analytical services and capabilities within the DOE complex and within other federal agencies. EBL is an active member of a laboratory consortium that provides a nationwide, integrated system to assist with response to environmental and radiological emergencies such as the Japanese reactor incident.

The Environmental Bioassay Lab is operated by Savannah River Nuclear Solutions, the management and operations contractor at SRS.

Additional information on the Department of Energy's Office of Environmental Management and the Savannah River Site can be found at <http://www.em.doe.gov> or <http://www.srs.gov>.

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