

## ACTION SHEET 12

between

The United States Department of Energy (DOE)

and

The Japan Atomic Energy Research Institute (JAERI)

for

Production of Initial Systems Requirement Documents  
for the Design, Construction, and Operation of a Clean Laboratory Facility  
for Environmental Sample Analysis

Pursuant to the DOE/JAERI Agreement Concerning Research and Development in Material Control, Accountancy, Verification, and Physical Protection, DOE and JAERI have agreed to cooperate on the Clean Laboratory Project of JAERI related to development of a clean chemistry laboratory and procedures for analysis of environmental samples (hereinafter referred to as the Project). In doing so, DOE and JAERI agree to carry out the cooperative effort outlined in this Action Sheet (hereinafter referred to as the Task).

A. Objective

The objective of the Task is to produce systems requirement documents (hereinafter referred to as the Documents) to accomplish three major cooperative efforts in support of the use of environmental sample analyses. First is a cooperative effort on the design and construction of a clean chemistry laboratory in Japan. Second is a cooperative effort to define the procedures and infrastructure requirements necessary for the operation and maintenance of the clean chemistry laboratory. Third is a cooperative effort to establish and maintain chemical separation procedures, analytical measurement techniques, and quality assurance procedures.

B. Current Activities

The DOE assisted the IAEA in the design, construction, and operations of a clean chemistry laboratory at the Seibersdorf Laboratory complex. The laboratory design used at Seibersdorf is patterned after the facility at the Los Alamos National Laboratory (LANL). Five DOE laboratories are qualified as members of the IAEA Network of Analytical Laboratories for analysis of environmental samples for

safeguards. The DOE has assisted in the training of inspectors to obtain samples and laboratory personnel for analyzing samples in support of environmental sampling being implemented as a safeguards tool under the IAEA 93+2 program. The DOE is assisting the IAEA to produce quality assurance samples applicable to specific environmental matrices.

JAERI has a scheme of building and operating a clean laboratory at the JAERI Tokai Research Establishment. JAERI has funds budgeted in Japanese Fiscal Year (JFY) 1996 for design and establishment of usage requirements for the clean chemistry laboratory and to begin training of an expert among other items. JAERI is selecting a location for the facility and has initiated preparatory work for the design process. JAERI has requested technical collaboration with the DOE to support the design, construction, and operation of the laboratory and for implementation of appropriate technical procedures. Applications to be supported are safeguards, CTBT, and other nuclear related sample collection and analysis. (\*)

\* Note: Integrating all of the perceived uses into the design aspects of a clean chemistry laboratory is essential to assure the quality and integrity of all the sample analysis results.

DOE and JAERI have established a planning and coordination group to oversee and direct the Project throughout its duration under the Action Sheet 11.

#### C. Scope of Work

This Action Sheet provides for technical collaborations between DOE and JAERI to produce the Documents that will define the basic requirements in designing, constructing, and operating a clean laboratory capable of performing environmental sample analyses.

The Documents will involve the following three aspects of the clean laboratory and its uses:

1. The clean laboratory building and equipment.
2. Protocols, procedures, and training and infrastructure requirements for the operation and maintenance of the clean laboratory facility.
3. Training, procedure transfer and development, and quality assurance for the collection and analysis of safeguards related materials from environmental samples in various matrices.

The Production of Initial Systems Requirement Documents in this action sheet 12 will be used to produce two subsequent action sheets as follows:

- an expanded action sheet for cooperation in the construction and implementation of the clean chemistry laboratory, Action Sheet 14 and /or other action sheets to be determined.
- production of final Systems Requirements Documents, Action Sheet 15.

D. Proposed Cooperative Activities

Los Alamos National Laboratory (LANL) will prepare the Initial System Requirements Documents, which will include:

1. Technical requirements for clean room in designing, constructing, and operating it.
2. Requirements for and methods of environmental sampling.
3. Pre-treatment of particulate samples and bulk samples.
4. Analytical methods.
5. Training.

The projected schedule for production of the Documents is shown in the attached Provisional Schedule of Activities for the Task.

E. Program Management

LANL is responsible for the DOE coordination of the joint activities with JAERI. Industrial experts in the U.S. may be used to complement the DOE laboratories' expertise. LANL shall work directly with JAERI in planning tasks and resolving programmatic and technical questions. U.S. DOE's representative in the American Embassy-Tokyo shall serve as the DOE representative for the Project in Japan.

The Safeguards Technology Laboratory at JAERI is responsible for all JAERI interactions under this Action Sheet.

F. Fiscal Management

JAERI shall provide funds for DOE to carry out the work at LANL. The amount of payment shall be subject to approval and the appropriation of necessary funding by the Japanese Government. Payment shall be made in the following manner.

A cash contribution of \$130,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued upon or shortly after the date of signatures of this Action Sheet. This payment is subject to approval and the appropriation of necessary funding by the Japanese Government for JFY 1996.

DOE shall be responsible for the planning and management of the funds and shall attempt to complete the JAERI-funded activities satisfactorily and within the cash contributions by JAERI. DOE costs are

## Provisional Schedule of Activities

	<u>Activity</u>	<u>Responsibility</u>	<u>Schedule/Status</u>
1.	The Task Starts	LANL/JAERI	January 1997
2.	Draft of Initial Systems Requirements	LANL	January-March 1997
3.	Draft Documents delivered to JAERI	LANL	March 15, 1997
4.	Task ends	LANL/JAERI	March 31, 1997