

## ACTION SHEET 2

### NEAR-REAL-TIME ACCOUNTING

Pursuant to the DOE/JAERI Agreement on R&D in Material Control, Accountancy, Verification, and Physical Protection

#### A. Objective

Development of near-real-time accounting (NRTA) techniques and equipment has the objective of improving the timeliness and accuracy of nuclear materials accounting in bulk handling facilities.

#### B. Current Activities

##### 1. DOE activities relevant to NRTA.

Los Alamos National Laboratory (LANL) has performed detailed studies on the application of NRTA to reprocessing, plutonium conversion, and MOX fuel fabrication facilities, demonstration of NRTA at the Barnwell reprocessing plant, and computer modelling of nuclear materials accounting for a MOX facility in the U.S. Extensive work has been performed on various data collection and analysis techniques. Current activities include:

- Review of verification methods and sequential data analysis techniques for IAEA use at commercial scale reprocessing plants;
- Analysis of detection sensitivity for NRTA techniques at reprocessing plants; and
- Bilateral and multilateral exchanges of information on NRTA.

##### 2. JAERI activities relevant to NRTA.

JAERI has performed detailed studies of NRTA applications and techniques, including a field test of NRTA at the Tokai Reprocessing Plant, data collection, and data evaluation. JAERI is constructing the Nuclear Criticality Evaluation Facility which may be available for demonstration and testing of NRTA techniques and equipment. Current activities include:

- Improved procedures for collection of operators' measurement data;
- Review of currently available NRTA-related software;
- Development of compact data collection and evaluation system for NRTA; and
- Exchanges of information on NRTA.

#### C. Bilateral Activities.

Planned bilateral activities will include periodic exchanges of information on current and planned developmental activities; joint research and development on NRTA instrument definition and design, data

acquisition, and data treatment; and joint evaluation of NRTA techniques and equipment.

Approvals:

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