5 November 2001
Session 1, 8:30 a.m.
Session 2, 10:30 a.m.

MARLAP Workshop

The Multi-Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual is a document which provides guidance for the planning, implementation and assessment phases of those projects which require the laboratory analysis of radionuclides. MARLAP's basic goal is to provide guidance and a framework for project planners, managers and laboratory personnel to ensure that radioanalytical laboratory data will meet a project's or program's data requirements and needs. To attain this goal, the manual seeks to provide the necessary guidance for national consistency in radioanalytical work in the form of a performance-based approach for meeting a project's data requirements. The manual focuses on activities performed at radioanalytical laboratories as well as activities and issues which direct, affect, or can be used to evaluate activities performed at radioanalytical laboratories. The guidance in MARLAP is designed to help ensure the generation of radioanalytical data of known quality appropriate for its intended use.

MARLAP was developed by a working group which included representatives from the Environmental Protection Agency; the Department of Energy; the Department of Defense; the Nuclear Regulatory Commission; the National Institute of Standards and Technology; the U.S. Geological Survey; the U.S. Food and Drug Administration; the Commonwealth of Kentucky; and the State of California. Since MARLAP employs a performance-based approach to laboratory measurements, the guidance contained in the manual is applicable to a wide range of programs, projects and activities which require radioanalytical laboratory measurements. Examples of data collection activities that MARLAP supports include site characterization; site cleanup and compliance demonstration; decommissioning of nuclear facilities; remedial and removal actions; effluent monitoring of licensed facilities; environmental site monitoring; background studies and waste management activities.

MARLAP is divided into two main parts. Part I is aimed primarily at project planners and managers and provides guidance on project planning with emphasis on analytical planning issues and developing analytical data requirements. Data Quality Objectives (DQOs) and Measurement Quality Objectives (MQOs) play a key role in the MARLAP Process outlined in Part I of the manual. DQOs are outputs of a directed planning process and these objectives address both sampling and analytical uncertainties. MQOs are project-specific requirements for select analytical parameters (e.g., method uncertainty, detection capability, specificity, etc.). MQOs are initially used for selecting and evaluating analytical methods and are also used in the ongoing and final evaluation of the data generated. Part I also provides guidance on preparing project

plan documents and radioanalytical statements of work (SOWs) and obtaining and evaluating radioanalytical laboratory services, data validation, and data quality assessment.

Part II of MARLAP is aimed primarily at laboratory personnel and provides guidance in the relevant areas of radioanalytical laboratory work. The chapters in Part II are intended to serve as a resource base of information on the laboratory analysis of radionuclides and provide guidance on a variety of activities performed at radioanalytical laboratories including sample preparation; sample dissolution; chemical separations; instrument measurements; data reduction, etc. Part II also has chapters on measurement statistics, laboratory quality assurance and quality control and waste management for radioanalytical laboratories. While the chapters in Part II do not contain detailed step-by-step instructions on how to perform certain laboratory tasks, the chapters do provide information on many of the options available for these tasks and discuss advantages and disadvantages of each.

The MARLAP Workshop will involve presentations on select aspects of the manual including: an overview of the MARLAP Manual; DQOs and the development of MQOs; the role of MQOs in the MARLAP Process; selecting and evaluating methods using a performance-based approach; the use of measurement uncertainty as a performance indicator for laboratory quality control. Each presentation will be followed by a question and answer session and the workshop will conclude with a panel discussion involving several members of the MARLAP Workgroup and attendees of the workshop. The discussion will focus on the overall approach outlined in the manual