

SPEAKER / PRESENTATION INFORMATION

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Biography	<p>Nichole Ellis is currently an independent consultant working with the Department of Energy Nuclear Criticality Safety Program. Her responsibilities as part of the NCSP Management Team include being a liaison between various aspects of the Nuclear Criticality Safety Program, such as the Criticality Safety Support Group, Nuclear Data Advisory Group, EndUsers Group, and the Criticality Safety Coordinating Team. Additionally, Nichole is responsible for the development and coordination of the process for the United States Criticality Integral Experiment Requests and Critical and Subcritical Experiment Design Teams. Nichole also participates in the International Criticality Safety Benchmark Evaluation Project and the International Reactor Physics Evaluation Project.</p>		
Title	<i>United States Department of Energy Critical, Subcritical, and Fundamental Physics Measurements Perspective and Status</i>		
Abstract	<p>The United States Department of Energy (DOE) Nuclear Criticality Safety Program (NCSP) is responsible for maintaining the fundamental capability to be able to perform critical, subcritical, and fundamental physics measurements, within the limits of its resources, to address the specific needs of the DOE United States Criticality Safety community. The capability to perform these various integral measurements supports safe, efficient fissionable material operations within DOE and is done by providing a sustainable infrastructure and a systematic, interactive process to assess, design, perform, and document integral criticality safety-related benchmark-quality experiments/measurements.</p> <p>DOE previously performed the majority of critical, subcritical, and fundamental physics measurements at Los Alamos National Laboratory in Los Alamos, NM. However, in order to ensure continued safety and security measures at designated DOE measurement facilities, DOE shut down the critical, subcritical, and fundamental physics experiment operations at Los Alamos and safely transported the material and associated equipment to a new, more secure location at the Nevada Test Site (NTS). The new Critical Experiment Facility (CEF) is currently under construction at the Device Assembly Facility and has already resumed subcritical and fundamental physics measurements. The CEF is scheduled for completion in 2010, and once the new experiment facility is fully operational, multiple approved critical measurements are scheduled to commence at this facility. Other DOE facilities, such as those located at Sandia National Laboratory, are also available and used for performing critical, subcritical, and/or fundamental physics measurements as necessary to support safe, efficient fissionable material operations within DOE.</p> <p>In order to facilitate integral measurement capabilities with DOE, a Critical Subcritical Experiment Design Team (C_EdT) process has been developed. The goal of the C_EdT process is to</p>		

provide a viable method for identifying, designing, and approving all new critical, subcritical, and fundamental physics measurements. This process will ensure that an experiment requestor's nuclear data needs are well understood and met by integrating all capabilities of the NCSP to design and approve the requested measurements, including deciding which facilities within DOE are best suited to perform and document the requested measurements. Additionally, this new process is an interactive process that ensures continuous communications between all parties of the C_EdT. At the completion of the approved measurements, the measurement data and evaluation of that data are provided to the Criticality Safety Community via the *International Handbook of Evaluated Criticality Safety Benchmark Experiments*.

This presentation will discuss the DOE NCSP's continued need for the ability to assess, design, perform, and document integral criticality safety-related benchmark-quality experiments/measurements; how the new CEF and other measurement facilities within the DOE are expected to perform and document the necessary requested measurements; how the new C_EdT process will ensure that all the measurements are properly assessed, designed, performed, and documented; and what current measurements are approved and/or are being performed by the DOE NCSP.