The Oak Ridge National Laboratory (ORNL) is organizing a workshop at ORNL July 14-15, 2005 to highlight the unique measurement capabilities of the Oak Ridge Electron Linear Accelerator (ORELA) facility and emphasize the important role of ORELA for performing differential cross-section measurements. The workshop will provide the opportunity to exchange ideas and information pertaining to nuclear cross-section measurements and their importance for nuclear applications. Currently, only a handful of accelerator facilities (ORELA, LANSCE, RPI LINAC, IPNS, etc.) are available in the U.S. for meeting domestic nuclear data needs. Each of these U.S. facilities are characterized by different performance characteristics that establish unique measurement capabilities at each individual facility, and collectively, these facilities represent a comprehensive U.S. measurement portfolio that can respond to current and emerging nuclear data needs. As one component of the overall U.S. measurement capability, ORELA provides detailed energy-resolution cross-section measurements in the resonance region. The objective of the workshop is to emphasize the technical community endorsement for ORELA in meeting nuclear data challenges in the years to come.

The ORELA facility consists of a 180 MeV electron accelerator and neutron producing targets that are used to generate neutrons which are then directed through underground and evacuated flight tubes to detector-station locations 10 to 200 m from the source. Neutrons are produced via bremsstrahlung and photoneutron reactions when a tantalum target is exposed to bursts of electrons. Intense nanosecond bursts of neutrons are produced with each burst containing neutrons having energies between 10^{-3} eV and 10^{8} eV. Pulse widths from 2 to 30 nanoseconds are available at repetition rates from 1-1000 pulses per second. Moderated or unmoderated neutrons can be produced, and the spectral shape of the neutron distribution can be tailored with movable filters. Using the time-of-flight (TOF) method to determine the energy of the interacting neutron, ORELA is primarily used to measure neutron reaction cross-sections (total, capture, fission, elastic, and scattering) with very detailed energy resolution in the resonance region for many materials.

In an effort to consolidate nuclear data meeting activities, plans are also being made to hold two additional working group meetings at ORNL prior to the ORELA workshop. The Department of Energy (DOE) Nuclear Data Advisory Group (NDAG) of the Nuclear Criticality Safety Program (NCSP) will meet on July 12, 2005 at ORNL followed by the Cross-Section Evaluation Working Group (CSEWG) meeting on July 13, 2005. Therefore, the week will culminate with a two-day ORELA workshop that will consist of a series of invited talks followed by a tour of the ORELA facility and closeout panel discussion. ORNL would like to invite you to participate in the ORELA workshop. The program agenda is currently being finalized. Additional information pertaining to the workshop program will be posted on this website in the near future. Please check back periodically for updated information.

There will not be a fee for the workshop; however, participants will be asked to cover their travel costs to and from the meeting. In order to help with the workshop planning, please complete the requested registration information on this website.