NSTD Nuclear Analysis Methods and Applications Group Highlights, June 2003
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Pre-Award Conference at LANL

On June 18, 2003, Brad Patton, Bryan Broadhead, and Jess Gehin attended a NA-22 Pre-Award Conference held at Los Alamos National Laboratory. ORNL has submitted several proposals in the area of attribution for radiological dispersion devices (RDD) and improvised nuclear devices (IND). The division of activities between NA-22 and Department of Homeland Security (DHS) is still somewhat undecided and several good contacts with possible sponsors and collaborators were established. Just prior to the conference the NAMA group received funding from NA-22 for development of the ORIGEN-ARP depletion/decay code system for application to conventional nuclear weapons. Further work is expected in this area in the near future. Collaborations with the Defense Threat Reduction Agency (DTRA) and the Air Force are also expected.

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National and International Nuclear Criticality Standards Coordination/Participation

NAMA personnel are key coordinators and contributors to national (i.e., American National Standards Institute/American Nuclear Society, ANSI/ANS) and international (i.e., International Organization for Standardization, ISO) standards development in the area of criticality safety. Calvin Hopper is Chair of ANSI/ANS Consensus Committee N16 on Nuclear Criticality Safety and Mike Westfall is a member of ANSI/ANS N16. Westfall is also the U.S. coordinator for ISO standards on the Nuclear Fuel Cycle developed under Subcommittee (SC) 5 of Technical Committee (TC) 85 while Hopper is Convener of the ISO Working Group (WG) 8 on Nuclear Criticality Safety which reports to ISO TC85/SC5. June was a particularly busy month for standards activities due to the occasion of the ANS Annual Meeting in San Diego and the convening of the annual ISO WG8 scheduled for Avignon, France. Hopper attended the ISO WG8 meeting where revisions were made to produce a final draft international standard on administrative practices and discussions were held relative to standard work items on determination of criticality accident fission yields for non-reactor nuclear facilities, and mixed oxide fuel processing. The Chair of ISO TC85 requested that a new work item regarding "burn-up credit" be initiated irrespective of the independent work evolving within the United States. Westfall (Member of the ANS Standards Steering Committee, SSC) attended the biannual SSC meeting in San Diego and also provided Hopper's Consensus Committee N16 report to the SSC, to the ANS Standards Subcommittee 8, and to the ANS Nuclear Criticality Safety Division Executive Committee. Additionally, Westfall (Overall Advisor for SC5 to the ANSI National Technical Advisory Group, NTAG) attended the first formal NTAG to re-establish an active US industrial and government participation in ISO standards activities.

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SCALE 5 Workshop at OECD/NEA Data Bank

Steve Bowman and Mark DeHart conducted a SCALE 5 Workshop, sponsored by the Organization for Economic Cooperation and Development (OECD) / Nuclear Energy Agency (NEA) at the NEA Data Bank in Paris, France, during the week of June 23 - 27. The NEA Data Bank distributes SCALE and other nuclear safety computer codes to OECD member countries.

The SCALE 5 workshop was attended by 16 participants from 8 nations. The workshop provided training on the use of several modules in SCALE 5, including ORIGEN-ARP, the new SCALE graphical user interface GeeWiz (**G**raphically **E**nhanced **E**diting **Wiz**ard), KENO-VI, and the new STARBUCS sequence for burnup credit. Lectures were also presented on the new TSUNAMI sensitivity/uncertainty sequence and the new TRITON/NEWT modules for 2-D flexible mesh discrete ordinates analysis. In addition to the formal lectures and problem sessions, the participants were able to ask specific questions related to their current work tasks.

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Publications

1. R. D. Busch and S. M. Bowman, "The KENO V.a Primer," in *Proc. of ANS 2003 Annual Meeting The Nuclear Technology Expansion: Unlimited Opportunities*, June l-5, 2003, San Diego, CA. [Summary]. *Trans. Am. Nucl. Soc*. **88**, 80-81 (June 2003).

2. Sedat Goluoglu, C. M. Hopper, and B. T. Rearden, "Extended Interpretation of Sensitivity Data for Benchmark Areas of Applicability," *Trans. Am. Nucl. Soc.* **88**, 77-79 (June 2003).

3. I. C. Gauld, *Foreign Travel Trip Report to Stockholm & Oskarshamn, Sweden, May 13-21,2003*, TA#169789, June 2003.

4. Y. Karni, D. Regev, E. Greenspan, S. Goluoglu, L. M. Petrie, and C. M. Hopper, "On the SMORES Capability for Minimum Critical Mass Determination," in *Proc. of ANS 2003 Annual Meeting "The Nuclear Technology Expansion: Unlimited Opportunities"*, June l-5, 2003, San Diego, CA. [Summary]. *Trans. Am. Nucl. Soc*. **88**, 82-83 (June 2003).