

Michael E. Dunn, Ph.D.

Nuclear Data and Criticality Safety Group Leader
Reactor and Nuclear Systems Division
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EDUCATION

University of Tennessee, Knoxville TN

Doctor of Philosophy in Nuclear Engineering, Nuclear Criticality Safety, December 1996

Dissertation title: “Development of a Continuous-Energy Version of the Monte Carlo Code KENO V.a”

University of Tennessee, Knoxville TN

Master of Science in Nuclear Engineering, Nuclear Criticality Safety, August 1994

Thesis title: “Nuclear Criticality Safety Evaluation of the ²³³U Inventory at the Oak Ridge National Laboratory Using ENDF/B-V Cross Sections”

University of Tennessee, Knoxville TN

Bachelor of Science in Nuclear Engineering, August 1992, **Top graduate in the College of Engineering**

BIOGRAPHICAL SKETCH

Michael Dunn, Ph.D. is the Nuclear Data and Criticality Safety (NDCS) Group Leader in the Reactor and Nuclear Systems Division (RNSD) at Oak Ridge National Laboratory (ORNL). Dr. Dunn has more than 20 years of nuclear engineering experience in the areas of nuclear criticality safety (NCS), radiation transport and cross-section processing methods development. Prior to work at ORNL, Dr. Dunn worked as a NCS engineer at the Paducah Gaseous Diffusion Plant (PGDP) in Paducah, KY. As a NCS engineer, Dr. Dunn provided technical operations support to various uranium enrichment operations at PGDP. While at PGDP, he performed work to support the enrichment plant transition from U.S. Department of Energy (DOE) to U.S. Nuclear Regulatory Commission (NRC) oversight.

Currently, Dr. Dunn is the Program Execution Manager and ORNL Task Manager for the U.S. Nuclear Criticality Safety Program (NCSP). As Program Execution Manager, Dr. Dunn provides support to the National Nuclear Security Administration (NNSA) in the management and execution of NCSP work tasks at 8 sites in the DOE Complex, including ORNL. Dr. Dunn has experience performing NCS analyses to support both DOE and NRC licensing application reviews, and he has significant expertise in NCS validation methods with application to NCS analyses. Dr. Dunn is a member of the SCALE software leadership team, and he is the primary developer of the initial continuous-energy KENO (CE-KENO) Monte Carlo software in SCALE. Dr. Dunn has significant experience with NCS analysis methods development and cross-section processing methods development to prepare nuclear data libraries for radiation transport software used in the nuclear industry.

Dr. Dunn oversees the ORNL cross-section measurement and evaluation work for providing improved evaluated cross-section data to the U.S. Evaluated Nuclear Data File (ENDF/B) system. Also, Dr. Dunn is Chair of the ENDF/B Formats and Processing Committee that oversees the international nuclear data formats used by the nuclear data projects in the U.S., Europe, Japan, China, and Russia. Dr. Dunn is Chair of

Subgroup 28 “Processing Covariance Data for the Resonance Region” Organization for Economic Development Nuclear Energy Agency (OECD/NEA) Working Party on International Nuclear Data Evaluation Cooperation (WPEC). Dr. Dunn is the primary author or co-author on more than 90 publications. He is a member of the American Nuclear Society (ANS), and he is a past board member of the ANS Oak Ridge/Knoxville Section.

WORK EXPERIENCE

UT-Battelle, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN

10/03—present

Nuclear Data and Criticality Safety Group Leader (August 2009—present)

Reactor Analysis Group Leader (Acting October 2008—August 2009)

Nuclear Data Group Leader (October 2003—August 2009)

- Program Execution Manager for the NNSA U.S. Nuclear Criticality Safety Program (NCSP)
 - Support NNSA in the management and execution of ~\$24M NCSP budget and work tasks at ANL, BNL, Hanford, LANL, LLNL, NSTec, ORNL, RPI, and SNL
 - Coordinate the development and maintenance of the Ten Year Mission and Vision and rolling Five Year Program Execution Plan
 - Coordinate the development and deployment of the 2-week and 1-week hands-on critical experiment training and education courses that involve staff and fissionable material resources at LANL, LLNL, NSTec, and SNL
 - Responsible for supporting NNSA in the management and execution of integral experiments at the Nevada National Security Site (NNS) National Criticality Experiments Research Center (NCERC) and SNL
 - Oversee the differential nuclear data measurements and cross-section evaluation work effort to provide nuclear data files for dissemination by the National Nuclear Data Center
- Program Execution Manager for supporting NNSA in establishing a US Nondestructive Assay (NDA) infrastructure program
 - Development of a Ten Year Mission and Vision and rolling Five Year Program Execution Plan
 - Manage technical work efforts of subcontracting members of the Technical Support Group (TSG) that advises NNSA on NDA technical issues
 - Oversee the ORNL work effort to develop a new, modern NDA measurement system for NNSA
- Line and program management for ORNL nuclear data and criticality safety work elements
 - Management of key nuclear data program elements: cross-section measurements, nuclear data evaluations, SAMMY software nuclear modeling development, and AMPX cross-section processing software and nuclear data library development
 - Project management for key sponsors that include NNSA, DOE Office of Nuclear Energy, Office of Science, and U.S. Nuclear Regulatory Commission
 - Manage projects and technical work tasks involving NCS issues for DOE and NRC licensing applications

- Establish and manage domestic and international collaboration to support ORNL methods and data development activities
- Technical and programmatic interface with ORNL nuclear groups such as Radiation Transport, Nuclear Security Modeling, Reactor Physics, RSICC, etc.; includes interactions with ORNL organizations outside RNSD: Physics Division, Fusion Division, SNS, and HFIR
- Member of the RNSD Modeling and Simulation and SCALE Leadership Teams overseeing the development and deployment of the radiation transport package for nuclear analyses
- Developed continuous-energy version of CE-KENO Monte Carlo code and supporting cross-section processing modules

12/97—10/03

Research & Development Staff Member

- Perform nuclear criticality safety (NCS) analyses and provide NCS consulting support for various nuclear applications at facilities inside and outside the DOE complex
- Experience in validation of NCS software and cross-section libraries for nuclear applications including the ORNL-developed Sensitivity and Uncertainty (S/U) methods
- Software development for SCALE system and AMPX cross-section processing system
- Extensive experience with the development and implementation of radiation transport and nuclear data processing methods
- Provide nuclear data support for ORNL radiation transport methods development and application including the production of continuous-energy and multi-group cross-section libraries for nuclear applications

Lockheed Martin Utility Services, Paducah Gaseous Diffusion Plant (PGDP), Paducah, KY

10/96 - 12/97

Nuclear Criticality Safety Engineer

- Responsible for various criticality safety evaluations and approvals for fissile material operations at PGDP
- Provided NCS support for daily production operations involved with the gaseous diffusion process
- Significant experience working with craft and operations personnel on daily basis to support NCS on process floor
- Validated NCS software for production use
- Coordinated project for criticality accident alarm system (CAAS) detector placement in PGDP laboratory facility
- Performed engineering tasks in support of the plant transition from DOE to NRC regulatory oversight
- Significant regulatory licensing experience under both DOE and NRC
- Performed 10 CFR 76.68 plant change reviews (PCR)
- Coordinated development of training modules for software validation and KENO V.a calculations

University of Tennessee, Knoxville, Department of Nuclear Engineering, Knoxville, TN

8/92 - 10/96

DOE Fellow/Graduate Research Assistant

- Dissertation topic involved the development of a continuous energy version of the criticality safety code KENO V.a using point MCNP cross sections

- Code and cross-section validations for NCS analyses
- NCS analyses of the stored ^{233}U inventory at ORNL Molten Salt Reactor and Building 3019
- Performed gamma heating and shielding analysis of the spent fuel storage pool of the proposed Advance Neutron Source Reactor

KEY PROFESSIONAL LEADERSHIP ACCOMPLISHMENTS

- Chair of the NNSA/NCSP Nuclear Data Advisory Group (NDAG) (2013 – 2014)
- Formats Chair of the Cross Section Evaluation Working Group (CSEWG) that oversees the development and maintenance of the U.S. Evaluated Nuclear Data File (ENDF/B) system (2007—present)
- Chair of Subgroup 28 “Processing Covariance Data for the Resonance Region” Organization for Economic Development Nuclear Energy Agency (OECD/NEA) Working Party on International Nuclear Data Evaluation Cooperation (WPEC)
- Member of OECD/NEA WPEC (2007—present)
- Selected by NNSA/NCSP Manager to serve on six member team to establish critical experiments collaboration between the United States and France (2008—2009)
- LANL Nuclear Program Advisory Committee (NPAC) member for the Los Alamos Neutron Science Center (LANSCE) facility responsible for reviewing/approving experiments for the LANSCE facility (2006—2009)
- Member of the DOE/NE Advanced Fuel Cycle Initiative (AFCI) Nuclear Data Working Group and Fuel Cycle Research and Development (FCR&D) Physics Working Group (2003—2012)
- Organized and planned July 2005 workshop for the ORELA facility that resulted in NNSA FY2006 investment of refurbishment funds to restart ORELA—accelerator restarted in FY2006 and continued operation through September 2009
- Led effort to secure National Historic Landmark designation for ORELA facility; organized and planned March 2007 ceremony at ORNL to recognize ORELA facility—ceremony attended by key NNSA sponsors
- Requested by DOE Office of Science Office of Nuclear Physics to organize session on Nuclear Data Measurements for the August 2006 Workshop to identify basic science needs to support advanced nuclear fuel cycle development—contributed to measurement report used to develop 2007 DOE/SC call for proposals for ONP
- Board member of the Oak Ridge/Knoxville Section of the American Nuclear Society (2001—2004)

CITIZENSHIP & SECURITY CLEARANCE

U.S. Citizen

Q-security clearance held at Oak Ridge National Laboratory

PUBLICATIONS

1. T. M. Miller, C. Celik, **M. E. Dunn**, J. C. Wagner, K. L. McMahan, N. Authier, X. Jacquet, G. Rousseau, H. Wolff, J. Piot, L. Savanier, N. Baclet, Y. -K. Lee, V. Masse, J. -C. Trama, E. Gagnier, F. Gabriel, P. Blanc-Tranchant, R. Hunter, S. Kim, G. M. Dulik, K. H. Reynolds, "Evaluation of the Concrete Shield Compositions from the 2010 Criticality Accident Alarm System Benchmark Experiments at the CEA Valduc SILENE Facility," *International Conference on Nuclear Criticality Safety 2015 (ICNC 2015)*, Charlotte, NC. September 13-17, 2015, (p. 1647- 1658).

2. B. T. Rearden, K. B. Bekar, C. Celik, K. T. Clarno, **M. E. Dunn**, S. W. D. Hart, A. M. Ibrahim, S. R. Johnson, B. R. Langley, J. P. Lefebvre, R. A. Lefebvre, W. J. Marshall, U. Mertyurek, D. E. Mueller, D. E. Peplow, C. M. Perfetti, L. M. Petrie, Jr., A. B. Thompson, D. Wiarda, W. A. Wieselquist, and M. L. Williams, "Criticality Safety Enhancements for SCALE 6.2 and Beyond." *International Conference on Nuclear Criticality Safety (ICNC 2015)*, Charlotte, NC September 13-17, 2015, (p. 1255-1269).
3. D. Wiarda, M. L. Williams, C. Celik, and **M. E. Dunn**, "AMPX: A Modern Cross Section Processing System for Generating Nuclear Data Libraries." *International Conference on Nuclear Criticality Safety (ICNC 2015)*, Charlotte, NC September 13-17, 2015, (p. 1241-1254).
4. Vladimir Sobes, John M. Scaglione, John C. Wagner, and **Michael E. Dunn**, "Validation Study for Crediting Chlorine in Criticality Analyses for Spent Nuclear Fuel Disposition." *International Conference on Nuclear Criticality Safety (ICNC 2015)*, Charlotte, NC September 13-17, 2015, (p. 552-563).
5. Vladimir Sobes, Bradley T. Rearden, Don E. Mueller, William J. Marshall, John M. Scaglione, and **Michael E. Dunn**, "Upper Subcritical Limit Calculations Based on Correlated Data." *International Conference on Nuclear Criticality Safety (ICNC 2015)*, Charlotte, NC September 13-17, 2015, (p. 1739-1746).
6. W. J. Marshall, M. L. Williams, D. Wiarda, B. T. Rearden, **M. E. Dunn**, D. E. Mueller, J. B. Clarity, and E. L. Jones, "Development and Testing of Neutron Cross-Section Covariance Data for SCALE 6.2." *International Conference on Nuclear Criticality Safety (ICNC 2015)*, Charlotte, NC September 13-17, 2015, (p. 1213-1225).
7. B. T. Rearden, L. M. Petrie, D. E. Peplow, K. B. Bekar, D. Wiarda, C. Celik, C. M. Perfetti, A. M. Ibrahim, S. W. D. Hart, **M. E. Dunn**, and W. J. Marshall, "Monte Carlo Capabilities of the SCALE Code System." *Annals of Nuclear Energy*, **82**, 130—141, (2015).
8. **Michael E. Dunn**, "Nuclear Data Advisory Group Technical Support for the US Nuclear Criticality Safety Program," *Trans. Am. Nucl. Soc.*, **111**, 784–787 (November 2014).
9. L. Leal, V. Sobes, M. Pigni, K. Guber, G. Arbanas, D. Wiarda, and **M. Dunn**, "ORNL Nuclear Data Evaluation Accomplishments for FY2013." *Trans. Am. Nucl. Soc.*, **111**, 780–783 (November 2014).
10. G. Arbanas, M. L. Williams, L. C. Leal, **M. E. Dunn**, B. A. Khuwaileh, C. Wang, and H. Abdel-Khalik, "Advancing Inverse Sensitivity/Uncertainty Methods for Nuclear Fuel Cycle Applications." *Nuclear Data Sheets*, **123**, 51-56, (2015).
11. B. T. Rearden, L. M. Petrie, D. E. Peplow, K. B. Bekar, D. Wiarda, C. Celik, C. M. Perfetti, and **M. E. Dunn**, "Enhancements in Continuous-Energy Monte Carlo Capabilities for SCALE 6.2." *PHYSOR 2014 – The Role of reactor Physics Toward a Sustainable Future*, Kyoto, Japan, September 28 – October 3, 2014.
12. B. T. Rearden, **M. E. Dunn**, et. al., "SCALE and AMPX Advancements to Support NCS Applications," *Trans. Am. Nucl. Soc.*, **109**, 907–910 (November 2013).
13. B. A. Khuwaileh, G. Arbanas, M. Williams, L. C. Leal, **M. E. Dunn**, H. S. Abdel-khalik, "The

Effect of Implicit Self-Shielding on the Inverse Sensitivity/Uncertainty Quantification Method for Thermal Reactors,” *Trans. Am. Nucl. Soc.*, **109**, 804–807 (November 2013).

14. G. Arbanas, B. A. Khuwaileh, M. Williams, L. C. Leal, **M. E. Dunn**, H. S. Abdel-khalik, “Integral Benchmark Experiments in the Inverse Sensitivity/Uncertainty Computations,” *Trans. Am. Nucl. Soc.*, **109**, 808–811 (November 2013).
15. B. T. Rearden, L. M. Petrie, D. E. Peplow, K. B. Bekar, D. Wiara, C. Celik, C. M. Perfetti, A. M. Ibrahim, S. W. D. Hart, and **M. E. Dunn**, “Monte Carlo Capabilities of the SCALE Code System,” *Joint International Conference on Supercomputing in Nuclear Applications and Monte Carlo 2013 (SNA+MC2013)*, La Cite des Sciences et de l’Industrie, October 27–31, 2013, Paris, France.
16. K. B. Bekar, C. Celik, D. Wiarda, D. E. Peplow, B. T. Rearden, and **M. E. Dunn**, “Enhancements in Continuous-Energy Monte Carlo Capabilities in SCALE,” *NCSD 2013 - Criticality Safety in the Modern Era: Raising the Bar*, September 29–October 3, 2013, Wilmington, NC.
17. B. T. Rearden, **M. E. Dunn**, D. Wiarda, C. Celik, K. Bekar, M. L. Williams, D. E. Peplow, C. M. Perfetti, I. C. Gauld, W. A. Wieselquist, J. P. Lefebvre, and R. A. Lefebvre, “Overview of SCALE 6.2,” *NCSD 2013 - Criticality Safety in the Modern Era: Raising the Bar*, September 29–October 3, 2013, Wilmington, NC.
18. T. M. Miller, **M. E. Dunn**, J. C. Wagner, and K. L. McMahan, N. Authier, X. Jacquet, G. Rousseau, H. Wolff, J. Piot, L. Savanier, and N. Baclet, Y. K. Lee, V. Masse, J. C. Trama, E. Gagnier, S. Naury, and P. Blanc-Tranchant, “Analysis of Measured Data from Experiments 2 and 3 of the 2010 Criticality Accident Alarm System Benchmark at the CEA VALDUC SILENE Facility,” *NCSD 2013 - Criticality Safety in the Modern Era: Raising the Bar*, September 29–October 3, 2013, Wilmington, NC.
19. Goran Arbanas, **Michael E. Dunn** and Mark L. Williams, “Inverse Sensitivity/Uncertainty Methods Development for Nuclear Fuel Cycle Applications,” *International Conference on Nuclear Data for Science and Technology (ND2013)*, March 4–8, 2013, New York, New York.
20. Marco T. Pigni, L. C. Leal, **M. E. Dunn**, K. H. Guber, F. Emiliani, S. Kopecky, C. Lampoudis, P. Schillebeeckx, and P. Siegler, “Evaluation of Tungsten Neutron Cross Sections in the Resolved Resonance Region,” *International Conference on Nuclear Data for Science and Technology (ND2013)*, March 4–8, 2013, New York, New York.
21. M. B. Chadwick, **M. E. Dunn**, et al., “ENDF/B-VII.1 Nuclear Data for Science and Technology: Cross Sections, Covariances, Fission Product Yields and Decay Data,” *Nuclear Data Sheets*, **112**, No. 12, 2887–2996 (2011).
22. A. Kahler, **M. E. Dunn**, et al., “ENDF/B-VII.1 Neutron Cross Section Data Testing with Critical Assembly Benchmarks and Reactor Experiments,” *Nuclear Data Sheets*, **112**, No. 12, 2997–3036 (2011).
23. L. C. Leal, K. H. Guber, D. Wiarda, G. Arbanas, **M. E. Dunn**, “ORNL Resonance Evaluation for ENDF/B-VII.1,” *Trans. Am. Nucl. Soc.*, **106**, 784–785 (June 2012).
24. G. Arbanas, **M. E. Dunn**, N. M. Larson, L. C. Leal, and M. L. Williams, “Convergence of Legendre Expansion of Doppler-Broadened Double Differential Elastic Scattering Cross Section,”

PHYSOR 2012 - Advances in Reactor Physics, Linking Research, Industry, and Education, April 15–20, 2012, Knoxville, Tennessee.

25. Marco T Pigni, **Michael E. Dunn** and Klaus H. Guber, “ ^{183}W Resonance Parameter Evaluation in the Neutron Energy Range Up to 5 keV,” *PHYSOR 2012 - Advances in Reactor Physics, Linking Research, Industry, and Education*, April 15–20, 2012, Knoxville, Tennessee.
26. G. Arbanas, B. Becker, R. Dagan, **M. E. Dunn**, N. M. Larson, L. C. Leal, M. L. Williams, “Covariance Matrix of a Double-Differential Doppler-broadened Elastic Scattering Cross Section,” *EPJ Web of Conferences*, **27**, 6 (2012).
27. L. C. Leal, K. H. Guber, D. Wiarda, G. Arbanas, H. Derrien, R. O. Sayer, N. M. Larson, **M. E. Dunn**, “ORNL Resolved Resonance Covariance Generation for ENDF/B-VII.1,” *Nuclear Data Sheets*, **113**, No. 12, 3502–3519 (2012).
28. J. M. Risner, D. Wiarda, T. M. Miller, D. E. Peplow, B. W. Patton, **M. E. Dunn**, J. C. Wagner, B. T. Parks, “Development and Testing of the VITAMIN-B7/BUGLE-B7 Coupled Neutron-Gamma Multigroup Cross-Section Libraries,” *Fourteenth International Symposium on Reactor Dosimetry (ISR-14)*, May 22–27, 2011, Bretton Woods, New Hampshire.
29. **M. E. Dunn**, et al., “Resonance Region Cross-Section Data Advancements for Nuclear Criticality Safety Applications and ENDF/B-VII.1,” *The International Conference on Nuclear Criticality (ICNC 2011)*, September 19–22, 2011, Edinburgh, Scotland.
30. T. M. Miller, **M. E. Dunn**, J. C. Wagner, K. L. McMahan, N. Authier, x. Jacquet, G. Rousseau, H. Wolff, J. Piot, L. Savanier, N. Baclet, Y. Lee, V. Masse, J-C. Trama, E. Gagnier, S. Naury, R. Lenain, R. Hunter, S. Kim, G. Dulik, K. H. Reynolds, “2010 CRITICALITY ACCIDENT ALARM SYSTEM BENCHMARK EXPERIMENTS AT THE CEA VALDUC SILENE FACILITY,” *The International Conference on Nuclear Criticality (ICNC 2011)*, September 19–22, 2011, Edinburgh, Scotland.
31. D. Wiarda, L. C. Leal, **M. E. Dunn**, “Cross-Section Covariance Data Processing with the AMPX Module PUFF-IV,” *Trans. Am. Nucl. Soc.*, **104**, 772–773 (June 2011).
32. D. Wiarda, **M. E. Dunn**, T. M. Miller, D. E. Peplow, J. M. Risner, B. W. Patton, *Production and Testing of the VITAMIN-B7 Fine-Group and BUGLE-B7 Broad-Group Coupled Neutron/Gamma Cross-Section Libraries Derived from ENDF/B-VII.0 Nuclear Data*, ORNL/TM-2011/12, UT-Battelle, LLC, Oak Ridge National Laboratory, 2011.
33. Goran Arbanas, **Michael E. Dunn** and Dorothea Wiarda, “Computation of Large Covariance Matrices by SAMMY on Graphical Processing Units and Multicore CPUs,” in *Proc. of International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2011)*, 2011.
34. S. Goluoglu, J. Leppanen, L. M. Petrie, **M. E. Dunn**, “SCALE Monte Carlo Eigenvalue Methods and New Advancements,” in *Proc. of Joint International Conference on Supercomputing in Nuclear Applications and Monte Carlo 2010 (SNA + MC 2010)*, October 17–21, 2010, Hitotsubashi Memorial Hall, Tokyo, Japan.
35. **Michael E. Dunn**, et al, “Resonance Region Nuclear Data Analysis to Support Advanced Fuel Cycle Development,” *Journal - Korean Physical Society*, **59**, No. 2, 1207–1212 (2011).

36. **Michael E. Dunn**, et al, “Resonance Region Nuclear Data Analysis to Support Advanced Fuel Cycle Development,” *International Conference on Nuclear Data for Science and Technology 2010*, April 26–30, 2010, Jeju Island, South Korea.
37. S. Goluoglu, L. M. Petrie, **M. E. Dunn**, D. F. Hollenbach, B. T. Rearden, “Monte Carlo Criticality Methods and Analysis Capabilities in SCALE,” *Nuclear Technology*, **174**, No. 2, 214–235 (2011).
38. **Michael E. Dunn**, et al., “Recent Advances in Resonance Region Nuclear Data Measurements and Analyses for Supporting Nuclear Energy Applications,” *2008 Annual Fall Meeting of the APS Division of Nuclear Physics*, October 23–26, 2008, Oakland, California.
39. D. Wiarda, G. Arbanas, L. Leal, **M. E. Dunn**, et al., “Recent Advances with the AMPX Covariance Processing Capabilities in PUFF-IV,” *Nuclear Data Sheets*, **109**, No. 12, 2791–2795, (2008).
40. R. C. Little, T. Kawano, G. D. Hale, M. T. Pigni, M. W. Herman, P. Oblozinsky, M. L. Williams, **M. E. Dunn**, G. Arbanas, D. Wiarda, R. D. McKnight, J. N. McKamy, and J. R. Felty, “Low-fidelity Covariance Project,” *Nuclear Data Sheets*, **109**, No. 12, 2828 (2008).
41. D. Wiarda, **M. E. Dunn**, D. E. Peplow, T. M. Miller, H. Akkurt, *Development and Testing of ENDF/B-VI.8 and ENDF/B-VII.0 Coupled Neutron-Gamma Libraries for SCALE 6*, ORNL/TM-2008/047, UT-Battelle, LLC, Oak Ridge National Laboratory, 2008.
42. **Michael E. Dunn**, et al., “Approximating Large Resonance Parameter Covariance Matrices with Group-Wise Covariance Matrices for Advanced Nuclear Fuel Cycle,” *4th Workshop on Neutron Measurements, Evaluations and Applications - Nuclear Data needs for Generation IV and Accelerator Driven Systems, NEMEA-4*, October 14–19, 2007, Prague, Czech Republic.
43. **Michael E. Dunn** and Michal W Herman, “Production and Processing of Covariance Data for Nuclear Applications by the Working Party on International Evaluation Nuclear Data Cooperation,” *PHYSOR-2008 - International Conference on the Physics of Reactors*, September 14–19, 2008, Interlaken, Switzerland.
44. Dorothea Wiarda and **Michael E. Dunn**, “Updated Covariance Processing Capabilities in the AMPX Code System,” in *Proc. of the Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerators*, 767–772, 2007.
45. **Michael E. Dunn** and Klaus H. Guber, “Nuclear Data Measurements with the Oak Ridge Electron Linear Accelerator (ORELA) for Supporting Nuclear Fuel Cycle Applications,” in *Proc. of the Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerators*, 2007.
46. M. L. Williams, B. L. Broadhead, **M. E. Dunn**, and B. T. Rearden, “Approximate Techniques for Representing Nuclear Data Uncertainties,” in *Proc. of the Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerators*, 744–752, 2007.
47. S. Goluoglu, S. M. Bowman, and **M. E. Dunn**, “KENO Monte Carlo Code Capabilities,” *Trans. Am. Nucl. Soc.*, **97**, 592–594 (November 2007).

48. L. C. Leal, H. Derrien, **M. E. Dunn**, D. E. Mueller, *Assessment of Fission Product Cross-Section Data for Burnup Credit Applications*, ORNL/TM-2005/065, UT-Battelle, LLC, Oak Ridge National Laboratory, December 2007.
49. **Michael. E. Dunn**, et al., “Perspective on Advances in Resonance-Region Nuclear Modeling and Opportunities for Future Research,” in *Proc. of the International Conference on Nuclear Data for Science and Technology ND2007*, 2007.
50. S. M. Bowman, M. D. DeHart, **M. E. Dunn**, S. Goluoglu, J. E. Horwedel, L. M. Petrie, B. T. Rearden, and M. L. Williams, “New Criticality Safety Analysis Capabilities in SCALE 5.1,” in *Proc. of the 8th International Conference on Nuclear Criticality Safety (ICNC2007)*, 403–407, April 2007.
51. S. Goluoglu, **M. E. Dunn**, N. M. Greene, L. M. Petrie, and D. F. Hollenbach, “Generation and Testing of the ENDF/B-VI Continuous-Energy Cross-Section Library for Use with Continuous-Energy Versions of KENO,” in *Proc. of the 8th International Conference on Nuclear Criticality Safety (ICNC2007)*, 364–366, 2007.
52. **M. E. Dunn**, et. al., *Proceedings of the Oak Ridge Electron Linear Accelerator (ORELA) Workshop*, ORNL/TM-2005/272, UT-Battelle, LLC, Oak Ridge National Laboratory, February 2006.
53. D. Wiarda and **M. E. Dunn**, *PUFF-IV*, ORNL/TM-2006/147, UT-Battelle, LLC, Oak Ridge National Laboratory, 2006.
54. M. B. Chadwick, **M.E. Dunn**, et. al., “ENDF/B-VII.0: Next Generation Evaluated Nuclear Data Library for Nuclear Science and Technology,” *Nuclear Data Sheets*, **107**, No 12, 2931–3060, December 2006.
55. D. Wiarda, **M. E. Dunn**, N. M. Greene, N. M. Larson, L. C. Leal, “New Capabilities for Processing Covariance Data in the Resonance Region,” *PHYSOR-2006 - Advances in Nuclear Analysis and Simulation*, September 10–14, 2006, Vancouver, British Columbia, Canada.
56. D. Wiarda, **M. E. Dunn**, N. M. Larson, L. C. Leal, “Processing of ENDF/B-VII Covariance Data for Use with Sensitivity/Uncertainty Analysis,” *Trans. Am. Nucl. Soc.*, **95**, 290–291 (November 2006).
57. D. Hollenbach and **M. E. Dunn**, “Status and Preliminary Testing of Continuous-Energy KENO V.a and KENO-VI,” *NCSD 2005 - Integrating Criticality Safety into the Resurgence of Nuclear Power*, September 19–22, 2005, Knoxville, TN.
58. **M. E. Dunn**, N. M. Greene, D. F. Hollenbach, and L. M. Petrie, “Monte Carlo Methods Development for a Continuous-Energy Version of KENO,” *MC2005 - The Monte Carlo Method: Versatility Unbounded in a Dynamic Computing World*, April 17–21, 2005, Chattanooga, TN.
59. **M. E. Dunn**, P. B. Fox, N. M. Greene, L. M. Petrie, “ENDF/B-VI Library Generation and Testing for the SCALE Code System,” *Trans. Am. Nucl. Soc.*, **92**, 758–759 (June 2005).
60. D. Hollenbach and **M. E. Dunn**, “Continuous-Energy Version of the SCALE Control Modules for Use with Continuous-Energy KENO V.a and KENO-VI,” *Trans. Am. Nucl. Soc.*, **92**, 749–750 (June 2005).

61. **M. E. Dunn**, N. M. Greene, and L. M. Petrie, "Point KENO V.a: A Continuous-energy Monte Carlo Code for Transport Applications," *PHYSOR-2004 - The PHYSICS of Fuel Cycles and Advanced Nuclear Systems: Global Developments*, April 25–29, 2004, Chicago, IL.
62. F. A. Alpan and **M. E. Dunn**, *YUMMY: The Yucca Mountain MCNP-Library*, ORNL/TM-2004/124, UT-Battelle, LLC, Oak Ridge National Laboratory, April 2004.
63. **M. E. Dunn** and L. C. Leal, "Calculating Probability Tables for the Unresolved-Resonance Region Using Monte Carlo Methods," *Nucl. Sci. Engr.*, **148**, 1–13 (2004).
64. **M. E. Dunn**, N. M. Greene, and L. M. Petrie, "Continuous-energy Version of KENO V.a for Criticality Safety Applications," *The 7th International Conference on Nuclear Criticality Safety (ICNC 2003)*, October 20–24, 2003, Tokai, Japan.
65. L. C. Leal and **M. E. Dunn**, "A New Approach for Calculating Average Cross Sections in the Unresolved Energy Region," *Nuclear Mathematical and Computational Science: A Century in Review, A Century Anew- M&C2003*, April 6–11, 2003, Gatlinburg, TN.
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