

Bradley T. Rearden

List of Publications

1998

B. L. Broadhead and B. T. Rearden, *Exploratory Studies for Three-Dimensional Sensitivity Methods*, ORNL/M-6583 (Letter Report to C. W. Nilsen), August 1998.

B. T. Rearden, J. J. Lichtenwalter, and C. M. Hopper, *Evaluation of Critical Experiment Parameters and Uncertainties With First-Order Sensitivity Techniques*, NUREG/CR-5624 (ORNL/TM-13718), U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, on hold. **DRAFT REPORT. Task 1 for JCN W6479.**

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B. T. Rearden, "Applications of One-Dimensional Sensitivity Methods to Evaluate the Impact of Critical Experiment Parameter Uncertainties," *ANS 1999 Annual Meeting and Embedded Topical Meeting*, June 6–10, 1999, Boston, Mass. **ON HOLD since February 2, 1999.**

C. V. Parks, B. T. Rearden, M. D. DeHart, B. L. Broadhead, C. M. Hopper, and L. M. Petrie, *Annual Environmental Management Science Program (EMSP) Summary Progress Report. Project Title Development of Nuclear Analysis Capabilities for DOE Waste Management Activities*, ORNL/TM-1999/101, June 1999.

B. L. Broadhead, R. L. Childs, and B. T. Rearden, "Computational Methods for Sensitivity and Uncertainty Analysis in Criticality Safety," pp. 57–65 in *Proceedings of ICNC'99, Sixth International Conference on Nuclear Criticality Safety*, Vol. I, Palais des Congrès, Versailles, FRANCE, September 20–24, 1999. [Paper]

Bradley Thomas Rearden, "Development of SAMS: A Three-Dimensional Sensitivity Analysis Module for the SCALE Code System," Ph.D. Dissertation, Texas A&M University, College Station, Texas, December 1999.

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C. V. Parks, B. T. Rearden, M. D. DeHart, B. L. Broadhead, C. M. Hopper, and L. M. Petrie, *Annual Environmental Management Science Program (EMSP) Project Summary. Project Title: Development of Nuclear Analysis Capabilities for DOE Waste Management Activities*, ORNL/TM-2000/65, February 2000.

B. T. Rearden, "SAMS: A Sensitivity Analysis Module for Criticality Safety Analysis Using Monte Carlo Techniques," 122.pdf (2102) in *Proceedings of the PHYSOR 2000, ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium*, May 7–12, 2000, Westin William Penn Hotel, Pittsburgh, Pennsylvania, USA. [ISBN0-89448-655-1; ANS Order No. 2700281 (May 2000)].

B. T. Rearden, "Sensitivity and Uncertainty Analysis for Nuclear Criticality Safety Using KENO in the SCALE Code System," in *Proceedings of Monte Carlo Radiation Physics, Particle Transport Simulation Applications*, Lisbon, Portugal, October 23–26, 2000.

B. L. Broadhead, C. M. Hopper, K. R. Elam, B. T. Rearden, and R. L. Childs, "Criticality Safety Applications of S/U Validation Methods," *Proc. of ANS/ENS 2000 International Winter Meeting and Embedded Topical Meetings*, November 12–16, 2000, Washington, D.C. *Trans. Am. Nucl. Soc.* **83**, 107–113, 2000.

B. L. Broadhead and B. T. Rearden, "Foundations for Sensitivity Based Criticality Validation Techniques," *Proc. of ANS/ENS 2000 International Winter Meeting and Embedded Topical Meetings*, November 12–16, 2000, Washington, D.C. *Trans. Am. Nucl. Soc.* **83**, 93-95, 2000.

B. T. Rearden and R. L. Childs, "Prototypical Sensitivity and Uncertainty Analysis Codes for Criticality Safety with the SCALE Code System," *ANS/ENS 2000 International Winter Meeting and Embedded Topical Meetings*, November 12–16, 2000, Washington, D.C. *Trans. Am. Nucl. Soc.* **83**, 98–100, 2000.

B. T. Rearden, "Perturbation Theory Eigenvalue Sensitivity Analysis with Monte Carlo Techniques," *Nucl. Sci. Eng.*, in process.

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C. V. Parks, B. T. Rearden, M. D. DeHart, B. L. Broadhead, and L. M. Petrie, Jr., *Final EMSP Report U.S. Department of Energy – Development of Nuclear Analysis Capabilities for DOE Waste Management Activities*, April 2001.

M. E. Dunn and B. T. Rearden, "Application of Sensitivity and Uncertainty Analysis Methods to a Validation Study for Weapons-Grade Mixed-Oxide Fuel," 35666.pdf in *Proc. of 2001 ANS Embedded Topical Meeting on Practical Implementation of Nuclear Criticality Safety*, November 11–15, 2001, Reno, NV [ANS Order No.: 700284; ISBN:0-89448-659-4.]

B. T. Rearden and D. E. Peplow, "Comparison of Sensitivity Analysis Techniques in Monte Carlo Codes for Multi-Region Criticality Calculations," in *Proc. of American Nuclear Society 2001 Winter Meeting, "Nuclear Research and Development,"* November 11–15, 2001, Reno, NV. *Trans. Am. Nucl. Soc.* **85**, 163–165 (2001).

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S. M. Bowman, D. F. Hollenbach, M. D. DeHart, B. T. Rearden, I. C. Gauld and S. Goluoglu, "An Overview of What's New in SCALE 5," in *Proc. of American Nuclear Society 2002 Winter Meeting "Building the World Nuclear Community -- Strategies for the Deployment of New Nuclear Technologies*, November 17–21, 2002, Washington, DC. *Trans. Am. Nucl. Soc.* **87**, 265–268 (2002).

D. F. Hollenbach, L. M. Petrie, B. T. Rearden, and S. M. Bowman, "KENO Postprocessor Analysis and Plotting Capabilities," in *Proc. of American Nuclear Society 2002 Winter Meeting "Building the World Nuclear Community -- Strategies for the Deployment of New Nuclear Technologies"*, November 17–21, 2002, Washington, DC. *Trans. Am. Nucl. Soc.* **87**, 270–272 (2002).

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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).

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K. R. Elam and B. T. Rearden, "Use of Sensitivity and Uncertainty Analysis to Select Benchmark Experiments for the Validation of Computer Codes and Data," *Nucl. Sci. and Eng.* **145**, 196B212 (2003).

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Sedat Goluoglu, K. R. Elam, B. T. Rearden, B. L. Broadhead, C. M. Hopper, and C.V. Parks, "Validation of the ^{10}B Capture Reaction in Nuclear Fuel Casks with Sensitivity Analysis," in *Proc. of ANS: International ANS/ENS 2003 Winter Meeting with cooperation from Nuclear Energy Institute on Nuclear Technology: Achieving Global Economic Growth While Safeguarding the Environment*, November 16–20, 2003, New Orleans, Louisiana. [Summary] *Trans. Am. Nucl. Soc.* **89**, 134–135 (2003).