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PUBLICATIONS

1979

C. F. Weber and E. M. Oblow, *Sensitivity Theory Applied to a Transient Thermal-Hydraulic Problem*, ORNL/TM-6900, Union Carbide Corp. (Nuclear Division), Oak Ridge National Laboratory, 1979.

1980

C. F. Weber, "Analysis and Solution of an Inverse Heat Conduction Problem," presented at the *Fall Meeting of the Society for Industrial and Applied Mathematics*, November 6–8, 1980, Houston, TX (1980).

D. G. Cacuci, C. F. Weber, E. M. Oblow, J. H. Marable, *Generalized Sensitivity Theory for Systems of Coupled Nonlinear Equations*, NUREG/CR-1003 (ORNL/NUREG/TM-349), U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, January 1980.

D. G. Cacuci, C. F. Weber, E. M. Oblow, J. H. Marable, "Sensitivity Theory for General Systems of Nonlinear Equations," *Nucl. Sci. Eng.* **75**, 88–110 (1980).

P. J. Maudlin, C. V. Parks, and C. F. Weber, "Thermal-Hydraulic Differential Sensitivity Theory," ASME Paper No. 80-WA/HT-56 (1980).

1981

C. F. Weber, "Application of an Inverse Heat Conduction Solution Procedure," *Trans. Am. Nucl. Soc.* **39**, 496–497 (1981).

C. F. Weber, "Analysis and Solution of the Ill-Posed Inverse Heat Conduction Problem," *Int. J. Heat Mass Transfer* **24**, 1783–1792 (1981).

1982

R. P. Wichner et al., *Station Blackout at Browns Ferry Unit One - Iodine and Noble Gas Distribution and Release*, NUREG/CR-2182, Vol. 2, 1982.

1983

C. F. Weber et al., "Fission Product Transport in a BWR Small-Break LOCA," *Trans. Am. Nucl. Soc.* **45**, 479–80 (1983).

R. P. Wichner et al., *SBLOCA Outside Containment at Browns Ferry Unit One, Volume 2. Iodine, Cesium, and Noble Gas Distribution and Release*, NUREG/CR-2672, Vol. 2 (ORNL/TM-8119/V2), 1983.

1984

R. P. Wichner et al., *Noble Gas, Iodine, and Cesium Transport in a Postulated Loss of Decay Heat Removal Accident at Browns Ferry*, NUREG/CR-3617 (ORNL/TM-9028), 1984.

E. C. Beahm, R. P. Wichner, and C. F. Weber, "Chemical Factors Affecting Fission Product Transport in BWR Severe Accidents," in *Trans. of 12th Water Reactor Safety Research Information Meeting*, October 23, 1984, Gaithersburg, MD (1984).

1985

L. J. Ott, C. F. Weber, and C. R. Hyman, "Station Blackout Calculations for Browns Ferry," in *Proc. 13th Water Reactor Safety Research Information Meeting*, October 22–25, 1985, Gaithersburg, MD, NUREG/CP-0071, 1985.

C. F. Weber, R. P. Wichner, and S. A. Hodge, "Tellurium Precursor Effects on Iodine Transport in a BWR Accident," *Trans. Am. Nucl. Soc.* **49**, 257–258 (1985).

1986

C. R. Hyman, C. F. Weber, and S. A. Hodge, "Effects of Lateral Separation of Oxidic and Metallic Core Debris on the BWR MK I Containment Drywell Floor," in *Proc. Specialist Meeting on Core Debris/Concrete Interactions*, EPRI Headquarters, September 3–5, 1986.

C. R. Hyman and C. F. Weber, "Effects of Lateral Separation of Oxidic and Metallic Core Debris on the BWR MK I Containment Drywell Floor," in *Trans. of 14th Water Reactor Safety Information Meeting*, Gaithersburg, October 27–31, 1986, NUREG/CP-0081 (1986).

E. C. Beahm, W. E. Shockley, and C. F. Weber, "Chemistry and Transport of Iodine in Containment," in *Proc. International Symposium Source Term Evaluation for Accident Conditions*, October 28–November 1, 1985, Columbus, OH, IAEA-5M-281-41 (1986).

1987

C. F. Weber, "Calculation of Absorbed Doses to Water Pools in Severe Accident Sequences," *Trans. Am. Nucl. Soc.* **55**, 367–368 (1987).

E. C. Beahm, C. F. Weber, T. S. Kress, and R. J. Anderman, *Calculations of Iodine Source Terms in Support of NUREG-0956*, ORNL/NRC/LTR-86/17, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1987.

T. S. Kress, E. C. Beahm, and C. F. Weber, "Modeling of the Transport of Vapor Fission Product Species to Aerosols," in *Proc. of Workshop on Water-Cooled Reactor Aerosol Code Evaluation and Uncertainty Assessment*, September 9–11, 1987, Brussels (1987).

C. R. Hyman, C. F. Weber, and S. A. Hodge, "Effects of Lateral Separation of Oxidic and Metallic Core Debris on the BWR MK I Containment Drywell Floor," in *Proc. Committee on Safety of Nuclear Installations (CSNI), Specialists Meeting on Core Debris/Concrete Interactions*, EPRI NP-5054-SR, 1987.

C. R. Hyman, C. F. Weber, and S. A. Hodge, *Effects of Lateral Separation of Oxidic and Metallic Core Debris on the BWR MK I Containment Drywell Floor*, ORNL/TM-10057, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1987.

1988

E. C. Beahm, C. F. Weber, T. S. Kress, W. E. Shockley, and S. R. Daish, "Chemistry and Mass Transport of Iodine in Containment," in *Proc. Meet. Am. Chem. Soc.*, June 4–9, 1988, Toronto, Canada (1988).

T. S. Kress, E. C. Beahm, W. E. Shockley, and C. F. Weber, "Trends Status," in *Proc. Trends Status, Severe Accident Research Partners Meet.*, October 17–21, 1988, Washington, DC (1988).

E. C. Beahm, C. F. Weber, S. R. Daish, and T. S. Kress, "TRENDS: Improvements and Evaluation," in *Proc. NRC Severe Accident Research Partners Review Meeting*, SNL, April 25–29, 1988, Albuquerque, NM (1988).

1989

E. C. Beahm, C. F. Weber, T. S. Kress, and W. E. Shockley, "Iodine Behavior in Containment," in *Proc. ICHMT Seminar on Fission Product Transport Processes in Reactor Accidents*, May 22–26, 1989, Dubrovnik, Yugoslavia (1989).

C. F. Weber, E. C. Beahm, T. S. Kress, S. R. Daish, and W. E. Shockley, "TRENDS: A Code for Modeling Iodine Behavior in Containment During Severe Accidents," in *Proc. ICHMT Int. Seminar on Heat and Mass Transfer Aspects of Fission Product Releases*, May 22–26, 1989, Dubrovnik, Yugoslavia (1989).

E. C. Beahm, C. F. Weber, T. S. Kress, W. E. Shockley, and S. R. Daish, "Chemistry and Mass Transport of Iodine in Containment," pp. 251–266 in *Proc. 2nd CSNI Workshop on Iodine Chemistry in Reactor Safety*, June 2–3, 1988, Toronto, Canada (1989).

1991

C. F. Weber, *Calculation of Absorbed Doses to Water Pools in Severe Accident Sequences*, NUREG/CR-5808 (ORNL/TM-11970), U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, 1991.

T. S. Kress, E. C. Beahm, and C. F. Weber, "Fission Product Behavior," *Trans. Am. Nucl. Soc.* **63**, 260 (1991).

C. F. Weber, E. C. Beahm, and T. S. Kress, "Iodine Chemical Forms in LWR Severe Accidents," in *Proc. 3rd CSNI Workshop on Iodine Chemistry in Reactor Safety*, September 11–13, 1991, Tokai-Mura, Japan, pp. 414–30, NEA/CSNI/R(91)15, JAERI, 1992.

1992

E. C. Beahm, C. F. Weber, T. S. Kress, and G. W. Parker, *Iodine Chemical Forms in LWR Severe Accidents, Final Report*, ORNL/TM-11861, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1992.

E. C. Beahm and C. F. Weber, "Iodine Chemical Forms in LWR Severe Accidents," presentation to *Advisory Committee Reactor Safeguards*, January 7–8, 1992, Bethesda, MD (1992).

E. C. Beahm, C. F. Weber, T. S. Kress, G. W. Parker, "Iodine Chemical Forms in LWR Severe Accidents," in *Proc. 19th Water Reactor Safety Information Meeting*, October 28–30, 1991, Bethesda, MD, pp. 325–42, NUREG/CP-0119 (1992).

C. F. Weber, E. C. Beahm, and J. S. Watson, "Optimal Determination of Rate Coefficients in Multiple Reaction Systems," *Comput. Chem.* **16(4)**, 325–333 (1992).

T. S. Kress, E. C. Beahm, C. F. Weber, and G. W. Parker, "Fission Product Transport Behavior," *Nucl. Technol.* **101**, 262–269 (1993).

C. F. Weber, E. C. Beahm, and T. S. Kress, *Models of Iodine Behavior in Reactor Containments*, ORNL/TM-12202, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1992.

E. C. Beahm, R. A. Lorenz, and C. F. Weber, *Iodine Evolution and pH Control*, ORNL/TM-12242, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1992.

1993

E. C. Beahm, R. A. Lorenz, and C. F. Weber, "Iodine Evolution and pH Control," *Trans. Am. Nucl. Soc.* **59**, 387 (1993).

C. F. Weber and E. C. Beahm, "Iodine Transport in a Severe Accident at the High Flux Isotope Reactor," *Trans. Am. Nucl. Soc.* **68A**, 275 (1993).

1994

E. C. Beahm, C. F. Weber, J. L. Collins, C. W. Chase, A. Boatman, and R. J. Weaver, "Sludge Dissolution/Leaching—ORNL," in *Proc. Efficient Separations and Processing Integrated Program (ESPIP) Meeting*, January 10–11, 1994, Dallas, TX (1994).

E. C. Beahm and C. F. Weber, "Sludge Washing and Dissolution of ORNL Melton Valley Storage Tank (MVST) Waste," in *Proc. DOE Sludge Workshop*, April 11–13, 1994, Hanford, WA (1994).

E. C. Beahm and C. F. Weber, "Sludge Washing and Dissolution of ORNL Melton Valley Storage Tank (MVST) Waste," in *Proc. DOE Efficient Separations and Processing Integrated Program*, January 10, 1994, Dallas, TX (1994).

1995

E. C. Beahm, C. F. Weber, J. L. Collins, B. Z. Egan, and C. W. Chase, "Washing and Dissolution of Melton Valley Storage Tank Sludge at Oak Ridge National Laboratory," in *Proc. Efficient Separations and Processing Integrated Program Technical Integration and Exchange Meeting*, January 24–26, 1995, Washington, DC (1995).

E. C. Beahm, C. F. Weber, J. L. Collins, B. Z. Egan, and C. W. Chase, *Sludge Washing and Dissolution of ORNL Melton Valley Storage Tank (MVST) Waste: Third Interim Letter Report*, ORNL/M-4022, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1995.

E. C. Beahm, C. F. Weber, J. L. Collins, B. Z. Egan, and C. W. Chase, *Washing and Dissolution of Actinides from Melton Valley Storage Tank (MVST) Waste: Interim Letter Report*, ORNL/M-4081, Martin Marietta Energy Systems, Oak Ridge National Laboratory, 1995.

E. C. Beahm, C. F. Weber, J. L. Collins, B. Z. Egan, and C. W. Chase, "Washing and Dissolution of Melton Valley Storage Tank Sludge at Oak Ridge National Laboratory," in *Proc. 9th Symposium on Separation Science and Technology for Energy Applications*, October 22–26, 1995, Gatlinburg, TN (1995).

E. C. Beahm, C. F. Weber, J. L. Collins, B. Z. Egan, and C. W. Chase, "Washing and Dissolution of Melton Valley Storage Tank Sludge at Oak Ridge National Laboratory," in *Proc. 2nd Int. Conference on Waste Management*, May 17–19, 1995, Washington, DC (1995).

1996

C. F. Weber and B. Z. Egan, "Convergence Analysis of the Equilibrium Code SOLGASMIX," in *Proc. 212th Natl. Mtg. Am. Chem. Soc.*, August 25–29, 1996, Orlando, FL (1996).

C. F. Weber and E. C. Beahm, *Chemical Modeling of Waste Sludges*, ORNL/TM-13200, Lockheed Martin Energy Research Corp., Oak Ridge National Laboratory, 1996.

1997

C. F. Weber and E. C. Beahm, "Thermodynamic Modeling of Sodium Fluoride-Phosphate Aqueous Solutions," presented at the *Annual Meeting of the American Institute of Chemical Engineers*, November 16–21, 1997, Los Angeles, CA (1997).

1998

C. F. Weber, "A Solubility Model for Aqueous Solutions Containing Sodium, Fluoride, and Phosphate," Ph.D. Dissertation, The University of Tennessee, Knoxville, May 1998.

E. C. Beahm et al., *Status Report on Solid Control in Leachates*, ORNL/TM-13660, Lockheed Martin Energy Research Corp., Oak Ridge National Laboratory, 1998.

C. F. Weber, "Convergence of the Equilibrium Code SOLGASMIX," *J. Comp. Physics* **145**, 655–670 (1998).

C. F. Weber and E. C. Beahm, *Iodine Volatility and pH Control in the AP-600 Reactor*, NUREG/CR-6599 (ORNL/TM-13555), U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, August 1998.

E. C. Beahm, C. F. Weber, and T. A. Dillow, *Technical Assistance in Review of Source Term-Related Issues of Advanced Reactors*, NUREG/CR-6408 (ORNL/TM-13144), U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, October 1998.

1999

C. F. Weber and E. C. Beahm, *Iodine Revolatization in a Grand Gulf LOCA*, ORNL/M-6544, Lockheed Martin Energy Research Corp., Oak Ridge National Laboratory, January 1999.

C. F. Weber and E. C. Beahm, *Calculation of pH and Iodine Volatility Under Reactor Accident Conditions*, ORNL/NRC/LTR-99/3, Lockheed Martin Energy Research Corp., Oak Ridge National Laboratory, March 1999.

C. F. Weber, E. C. Beahm, and J. S. Watson, "Modeling Thermodynamics and Phase Equilibria for Aqueous Solutions of Trisodium Phosphate," *J. Sol. Chem.* **28(11)**, 1207–1238 (November 1999).

[Old title: A Solubility Model for Aqueous Solutions of Tri-sodium Phosphate].

2000

C. F. Weber, "Calculation of Pitzer Parameters at High Ionic Strengths," *Ind. Eng. Chem. Res.*, **39(2)**, 4422–4426 (February 2000).

C. F. Weber, E. C. Beahm, D. D. Lee, and J. S. Watson, "A Solubility Model for Aqueous Solutions Containing Sodium, Fluoride, and Phosphate Ions," *Ind. Eng. Chem. Res.* **39(2)**, 518–526 (February 2000).

C. F. Weber, *Review of Grand Gulf Methodology and Calculations for pH Control and Iodine Volatility*, ORNL/NRC/LTR-00/07, U.S. Nuclear Regulatory Commission, Oak Ridge National Laboratory, June 2002.

B. Toghiani, J. S. Lindner, C. F. Weber, and R. D. Hunt, *Modeling of Sulfate Double-salts in Nuclear Wastes*, ORNL/TM-2000/317, UT-Battelle, LLC, Oak Ridge National Laboratory, October 2000.

2001

C. F. Weber, *Phase Equilibrium Studies of Savannah River Tanks and Feed Streams for the Salt Waste Processing Facility*, ORNL/TM-2001/109, UT-Battelle, LLC, Oak Ridge National Laboratory, June 2001.

C. F. Weber, *Thermodynamic Modeling of Savannah River Evaporators*, ORNL/TM-2001/102, UT-Battelle, LLC, Oak Ridge National Laboratory, August 2001.