Helen A. Grogan, Ph.D.

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Education

Ph.D., Radioecology, Imperial College of Science and Technology, University of London, 1984
B.Sc. 2(1), Botany, University of London, 1980
Diploma of Imperial College, University of London, 1980
Associate of the Royal College of Science, University of London, 1980

Professional Experience

Risk Assessment Corporation
Scientific Director, Neeses, South Carolina (2002–present)

Presently works closely with Risk Assessment Corporation (www.racteam.com) assuming overview responsibilities for the technical aspects of projects including quality and delivery.

Cascade Scientific, Inc.
President, Bend, Oregon (1995–present)

Senior consultant in all areas of environmental risk assessment with emphasis on public exposures to radionuclides and chemicals released to the environment. Work has been carried out for UNSCEAR, EPRI, U.S. EPA, NCRP, NAS/NRC, Waste Control Specialists, Colorado Department of Public Health and Environment, Centers for Disease Control and Prevention, State of New Jersey Department of Environmental Protection, New Mexico Environment Department, Department of Justice, and State of Washington Office of Attorney General. Many projects have been performed in collaboration with Risk Assessment Corporation.

- Dose reconstruction of public exposures and risks from historical releases of radionuclides and chemicals from Rocky Flats in Colorado, the Savannah River Site in South Carolina, and the Hanford Nuclear Facility in Washington
- Audits of Los Alamos National Laboratory for compliance with the Clean Air Act, and Oak Ridge National Laboratory Rad NESHAPs Program and Dose Assessment Methodologies Required for DOE Order 5400.5
- Review and Development of Soil Action Levels for Clean Up of Rocky Flats
- Exposure and Risks from the Cerro Grande Fire at Los Alamos
- Development of scientific methods and tools to guide long-term recovery decisions with stakeholder involvement following a radiological emergency
- Development of a web-based data management and evaluation application (known as RACER) that facilitates demonstration of environmental compliance, and environmental and dose assessment
- Implementation of RACER across Exelon fleet of nuclear power plants and PSEG nuclear power plants to manage effluent and environmental monitoring data and reporting

- Development of a dose-based compliance system for low-level radioactive waste disposal facility using routine environmental monitoring data.
- Performance assessment for low-level radioactive waste disposal at the CWF and FWF facilities and licensed Subtitle C hazardous waste at the RCRA landfill, Andrews. Texas
- Development and Implementation of the Sample Management and Analytical Results Tracking (SMART) System for Hanford Mission Support Alliance (MSA)
- Dose and risk calculations for commercial landfills in Kentucky and Oregon that inadvertently accepted TENORM (Technologically Enhanced Naturally Occurring Radioactive Material).
- Implementation of a methodology to determine radon releases from waste streams to determine compliance with Oregon pathway exemption requirements.
- Consultant to UNSCEAR (United Nations Scientific Committee on the Effects of Atomic Radiation) on Quality Criteria for Evaluating Public Exposure to Ionizing Radiation from Natural and Other Sources. 2020 – 2022.
- Staff consultant to NCRP Secretariat in support of:
    - Scientific Committee 6-11 "Deriving Organ Doses for Medical Radiation Workers Using Personal Monitoring Data with a Focus on Lung" 2018–2020.
    - Scientific Committee 6-12 "Development of Models for Brain Dosimetry for Internally Deposited Radionuclides" 2019–2022
    - Scientific Committee 3-2. "Instrument Response Verification and Calibration for Use in Radiation Emergencies" 2021 - 2022

Independent Consultant
Scientific Consultant, Vero Beach, Florida (1992–1995)

Worked on dose reconstruction projects related to historical releases from the DOE weapons complex.

Intera Information Technologies
Scientific Consultant, Henley-on-Thames, United Kingdom (1989–1992)

Senior consultant for the Environmental Systems Assessment Group involved in a wide range of projects concerned with the assessment of radioactive and nonradioactive hazardous wastes. Provided technical assistance to Nagra to coordinate and execute the Kristallin I and Wellenberg '92 safety assessments for high-level waste and low-/intermediate-level waste disposal. Responsible for technical coordination of Intera contracts with Nagra. Key projects included the following:

- Technical secretariat to BIOMOVS (BIospheric MOdel Validation Study) – an international cooperative effort to test models designed to quantify the transfer and accumulation of radionuclides and other trace substances in the environment.
- Developed an outline methodology for the comparative assessment of environmental impacts from landfilled wastes generated by prescribed processes for Her Majesty's Inspectorate of Pollution, Department of the Environment.
- Conducted a project for the Commission of the European Communities (CEC) in collaboration with IMA (Spain) to compare the approaches used to justify land-based disposal of toxic wastes and solid radioactive wastes, to identify where technical improvements to these approaches could be made, and to develop methods for their implementation.

- Conducted scenario analyses for the Nagra Kristallin I and Wellenberg projects and developed the supporting databases to provide a structured and consistent framework for identifying important phenomena (features, events, and processes) that need to be accounted for in repository performance assessment.
- Investigated the post-disposal implications of gas generated from a low-/intermediate-level waste repository for Nagra.

Eidg. Institut für Reaktorforschung (EIR) (now the Paul Scherrer Institute (PSI), (formerly Swiss Federal Institute for Reactor Research)
Geosphere and biosphere transport modeling program leader (1988–1989)
Guest Scientist, Würenlingen, Switzerland (1984–1987)

Member of the Repository Performance Assessment Group and responsible for the biosphere modeling aspects of the performance assessment of high-level waste and low-/intermediate-level waste repositories.

- Contributed to Projekt Gewähr 1985 (demonstration of radwaste disposal feasibility in Switzerland).
- Spent summer of 1987 working with Robert Gardner, Ph.D, and F. Owen Hoffman at Oak Ridge National Laboratory to gain experience in probabilistic modelling techniques.
- Development of quantitative geomicrobiological models. Appointed technical coordinator of the new Nagra microbiology program in April 1988, which was designed to quantitatively consider microbial effects in a radioactive waste repository for use in subsequent performance assessments. This effort involved coordinating research groups within Switzerland and other European countries.
- January 1988, appointed sub-program leader for the geosphere and biosphere transport modeling. This work encompassed performance assessment in general, including scenario evaluation and consequence analysis.
- Actively participated in BIOMOVS. As chairperson for test scenario B2 (Irrigation with Contaminated Groundwater) was responsible for producing and editing the technical report presenting the study results.

Committee Memberships

Member, U.S. Delegation, 69th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 2022. 9 May – 13 May, 2022.

Member, U.S. Delegation, 68th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 2021. 21 June – 25 June, 2021 (Virtual Meeting).

Member, U.S. Delegation, 67th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 2020. 2 November – 6 November, 2020 (Virtual Meeting).

Member, U.S. Delegation, 66th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 10 June – 14 June, 2019.

Member, National Council on Radiation Protection and Measurements Scientific Committee 3-1 "Guidance for Emergency Responder Dosimetry," 2014 – 2019.

Member, U.S. Delegation, 65th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 11 June–14 June, 2018.

Member, U.S. Delegation, 64th Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 29 May–2 June, 2017.

Member, U.S. Delegation, 63rd Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 27 June–1 July, 2016.

Member, U.S. Delegation, 62nd Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 1–5 June, 2015.

Member, U.S. Delegation, 61st Session of United Nations Scientific Committee on the Effects of Atomic Radiation. Vienna, Austria. 21–25 July, 2014.

Chair, IAEA consultancy to develop guidance on management of large amounts of radioactive waste after an emergency situation, 2013 – 2015.

Member, Institute of Medicine of the National Academies "Research Directions in Human Biological Effects of Low Level Ionizing Radiation," 2013 – 2014.

Advisor, National Council on Radiation Protection and Measurements Scientific Committee 5-1 "Decision Making for Late-Phase Recovery from Nuclear or Radiological Incidents," 2011 – 2013.

Member, National Council on Radiation Protection and Measurements Scientific Committee 1-19 "Health Protection Issues Associated with Use of Active Detection Technology Security Systems for Detection of Radioactive Threat Materials," 2009 – 2011.

Member, National Academy of Sciences Committee to Review the "Worker and Public Health Activities Program Administered by the Department of Energy and the Department of Health and Human Services," 2005 – 2006.

Member, Merit Panel, "Review of the Preliminary Performance Assessment for Waste Management Area C at the Hanford Site, Washington." Convened by CH2M-Hill Hanford Group, Inc., with concurrence of the Department of Energy and the State of Washington Department of Ecology, 2004.

Member, Radiation Advisory Committee, Science Advisory Board, U.S. Environmental Protection Agency, 2001 – 2007.

Consultant, Environmental Models Subcommittee, Executive Committee, U.S. Environmental Protection Agency, 1999 – 2000.

Member, Scientific Committee on Dose Reconstruction, National Council on Radiation Protection and Measurements, 1994 – 2000.

Professional Society Memberships

American Association for the Advancement of Science

Member, National Council on Radiation Protection and Measurements (NCRP), 2014–present

Health Physics Society

Courses Taught and Offered

Environmental Risk Assessment and Analysis, Training Course H-420. Source Term Evaluation; Terrestrial Transport and Pathway Analysis; Exposure Scenarios, Dose and Risk Coefficients; Screening Approach Case Studies; Validation and Confirmatory Analysis; Case Study – The Fernald Historical Dose Reconstruction Project. Training Course H-420 prepared and presented by Risk Assessment Corporation for the U.S. Nuclear Regulatory Commission at the NRC Professional Development Center, Three White Flint North, Maryland. April 27–

May 1, 2015, 22 Attendees

Environmental Risk Assessment and Analysis, Training Course H-420. Source Term Evaluation; Terrestrial Transport and Pathway Analysis; Exposure Scenarios, Dose and Risk Coefficients; Screening Approach Case Studies; Validation and Confirmatory Analysis; Case Study – The Fernald Historical Dose Reconstruction Project. Training Course H-420 prepared and presented by Risk Assessment Corporation for the U.S. Nuclear Regulatory Commission at the NRC Professional Development Center, Three White Flint North, Maryland. April 27–May 1, 2015, 9 Attendees

Radiological Risk Assessment for Decision Making, Compliance, and Emergency Response. Exposure Scenarios; Model Validation and Testing. Crystal City Marriott, Arlington, Virginia. Risk Assessment Corporation. March 4–8, 2013, 42 attendees.

Radiological Risk Assessment for Decision Making, Compliance, and Emergency Response. Scenarios of Exposure, Defining the Representative Individual; Model Validation and Testing. Crystal City Marriott, Arlington, Virginia. Risk Assessment Corporation. March 5–9, 2012, 37 attendees.

Radiological Risk Assessment and Environmental Analysis Course. Uncertainty in Assessment Models and Validation; Case Studies: Pulling it all Together; RACER: A Process and Tools for an Integrated Approach to Risk Assessment. ITC School of Underground Waste Storage and Disposal. University of Bristol Risk Centre, Bristol, United Kingdom. June 22–26, 2009, 17 attendees.

Environmental Risk Assessment Analysis Training Course H-401. Source Term Evaluation; Exposure, Dose and Risk Assessment; Practical Application of Models to Risk Assessment; Validation and Confirmatory Analysis; Continuing the Environmental Risk Assessment Process. Training Course H-401 prepared and presented by Risk Assessment Corporation for the U.S. Nuclear Regulatory Commission at the NRC's Professional Development Center, Bethesda, Maryland. January 26–30, 2009, 23 attendees.

Risk Assessment for Radioactively Contaminated Sites: Los Alamos Case Study. Geologic Disposal of High-Level Waste. ITC School of Underground Waste Storage and Disposal. September 2–5, 2008. Las Vegas, Nevada, 25 attendees.

Risk Assessment for Radioactively Contaminated Sites: Los Alamos Case Study. Geologic Disposal of High-Level Waste. ITC School of Underground Waste Storage and Disposal. June 25–28, 2007. Las Vegas, Nevada, 24 attendees.

Conversion to Dose and Risk. Part of Three Short Courses for Regulators and Radiation Health Specialists: Emerging Topics in Radiation Protection and Risk Assessment. March 16–18, 2004. Kiawah Island, South Carolina, 25 attendees.

Model Testing and Uncertainty. Part of Three Short Courses for Regulators and Radiation Health Specialists: Emerging Topics in Radiation Protection and Risk Assessment. March 16–18, 2004. Kiawah Island, South Carolina, 25 attendees.

Testing Models Used for Risk Assessment. Part of a five-day course developed and presented by Risk Assessment Corporation. Calculating and Understanding Risks from Radionuclides Released to the Environment. November 15–19, 1999. Seattle, Washington, 40 attendees.

Testing Models Used for Risk Assessment. Part of a five-day course developed and presented by Radiological Assessment Corporation. Calculating and Understanding Risks from Radionuclides Released to the Environment. April 28–May 2, 1997. Santa Fe, New Mexico, 150 attendees.

Text Book and Text Book Chapter Publications

Institute of Medicine and National Research Council of the National Academies. 2014. *Research on Health Effects of Low-Level Ionizing Radiation Exposure – Opportunities for the Armed Forces Radiobiology Research Institute*. Review Committee Members – Hricak, H. (Chair), D.J. Brenner, L.T. Dauer, G.X. Ding, F. Dominici, **H.A. Grogan**, D. Hoel, E.F. Maher, W.F. Morgan, G. Pion, D. Richardson, R. Wilkins. The National Academies Press, Washington, D.C.

Till, J.E. and **H.A. Grogan** (editors). 2008. *Radiological Risk Assessment and Environmental Analysis*. New York: Oxford University Press.

Grogan, H.A. 2008. "Model Validation." Chapter 14 in *Radiological Risk Assessment and Environmental Analysis.* New York: Oxford University Press, 589–612.

National Research Council of the National Academies. 2006. *Review of the Worker and Public Health Activities Program Administered by the Department of Energy and the Department of Health and Human Services.* Review Committee Members: Przybylowicz, E.P (Chair), E.H. Clark II, I. Feller, P. Fenner-Crisp, R.W. Field, S.M. Friedman, **H.A. Grogan**, J. Mandel, G. Paulson, R.K. Sokas, D.O. Stram, and T. Zheng. The National Academies Press, Washington, D.C.

Peer-Reviewed Publications

Caffrey, E.A., A.S. Rood, **H.A. Grogan**, J.E. Till, K. Herman. 2021. "Dose Assessment for Technologically Enhanced Naturally Occurring Radioactive Materials Disposal in Landfills." *Health Phys.* 121(3):209-224. *doi: 10.1097/HP.0000000000001439*

Mohler, H.J., A.S. Rood, **H.A. Grogan**, E.A. Caffrey, and J.E. Till. 2021. "Analysis of Environmental Data to Support Quantification of Historical Releases from a Former Uranium Processing Facility in Apollo, Pennsylvania." *Health Phys.* 120(5):495-509.

Yoder, C., Balter, S., J.D. Boice Jr, **H.A. Grogan**, M. Mumma, L.N. Rothenberg, C. Passmore, R.J. Vetter, L.T. Dauer. 2021. Using personal monitoring data to derive organ doses for medical radiation workers in the Million Person Study—considerations regarding NCRP Commentary no. 30. *J Radiol Prot.* 41(1):118-128. 10.1088/1361-6498/abcfcb

Caffrey, E.A., P.G. Voillequé, A.S. Rood, **H.A Grogan**, H.J. Mohler, K.R. Meyer, and J.E. Till. 2021. "Reconstruction of Enriched Uranium Released to Air from the Former Apollo Facility, Apollo, Pennsylvania, USA." *Health Phys.* 120(4):417-426.

National Council on Radiation Protection and Measurements. 2020. *Using Personal Monitoring Data to Derive Organ Doses for Medical Radiation Workers, with a Focus on Lung*. NCRP Commentary No. 30. National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland. Staff Consultant **H.A. Grogan**.

Rood, A.S., **H.A. Grogan**, H.J. Mohler, K.R. Meyer, P.G. Voillequé, J.E. Till. 2020. "Reconstruction of Atmospheric Concentrations of Enriched Uranium from the Former Apollo Facility, Apollo, Pennsylvania, USA." *J Radiol Prot.* Jan; 211. https://doi.org/10.1016/j.jenvrad.2019.106045

Rood, A.S., **H.A. Grogan**, H.J. Mohler, J.R. Rocco, E.A. Caffrey, C. Mangini, J. Cartwright, T. Matthews, C. Shaw, M.E. Packard, J.E. Till. 2020. "Use of Routine Environmental Monitoring Data to Establish a Dose-Based Compliance System for a Low-Level Radioactive Waste Disposal Site." *Health Physics*. 118(1):1-17. DOI: 10.1097/HP.0000000000001116.

National Council on Radiation Protection and Measurements. 2019. *Implementation Guidance for Emergency Response Dosimetry*. NCRP Commentary No. 28. National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland. Scientific Committee Members – S.V. Musolino and A. Salame-Alfie (Co-Chairs), B.R Baker, B.R. Buddemeier, J.A. Donnelly Sr., **H.A. Grogan**, W. Haley, W.E. Irwin III, D.A. Pasquale, R.K. Schlueck, J.S. Wieder. May 24.

Shore, R., Beck, H., Boice Jr, J.D., Caffrey, E.A., Davis, S., **Grogan, H.A.**, Mettler, F.A., Preston, R.J., Till, J., Wakeford, R., Walsh, L., and Dauer, L.T. 2019. Response to Letter by Moghissi and Calderone. *Health Phys.* Aug;117(2):224-225.

Shore, R., Beck, H., Boice Jr, J.D., Caffrey, E.A., Davis, S., **Grogan, H.A.**, Mettler, F.A., Preston, R.J., Till, J., Wakeford, R. Walsh, L. and Dauer, L.T. 2019. Reply to Comment on "Implications of recent epidemiologic studies for the linear nonthreshold model and radiation protection." *J Radiol Prot.* Jun;39(2):655-659. doi: 10.1088/1361-6498/ab077f. Epub 2019 May 24.

Till, J.R., H.L. Beck, John D. Boice, Jr., H. Justin Mohler, Michael T. Mumma, Jill W. Aanenson, and **H.A. Grogan**. 2019. "Asbestos Exposure and Mesothelioma Mortality among Atomic Veterans." *Int. J. of Radiation Biology*. 93(10) 1128-1144. January 8, 2019. https://doi.org/10.1080/09553002.2018.1551641.

Aanenson, J.A., J.E. Till, **H.A. Grogan**. 2018. "Understanding and communicating radiation dose and risk from cone beam computed tomography in dentistry." *The Journal of Prosthetic Dentistry* 120 (3); 353-360. DOI: 10.1016/j.prosdent.2018.01.008.

Till, J.E., H.L. Beck, J.W. Aanenson, **H.A. Grogan**, H.J. Mohler, S.S. Mohler, P.G. Voillequé. 2018. "Dosimetry associated with veterans who participated in nuclear weapons testing." *International Journal of Radiation Biology*, DOI: 10.1080/09553002.2018.1551639.

Till, J.E., H.L. Beck, J.D. Boice Jr, H.J. Mohler, M.T. Mumma, J.W. Aanenson, **H.A. Grogan**. 2018. "Asbestos exposure and mesothelioma mortality among atomic veterans." *International Journal of Radiation Biology*, DOI: 10.1080/09553002.2018.1551641.

Shore, R.E., Beck, H.L., Boice, J.D., Jr., Caffrey, E.A., Davis, S., **Grogan, H.A**., Mettler, F., Preston, J.A., Till, J.E., Wakeford, R., Walsh, L., and Dauer, L.T. 2018. "Recent Epidemiologic Studies and the Linear-Nonthreshold Model for Radiation Protection—Considerations Regarding NCRP Commentary 27." Health Physics. 116 (2), 235-246.

Shore, R.E., Beck, H.L., Boice, J.D., Jr., Caffrey, E.A., Davis, S., **Grogan, H.A**., Mettler, F., Preston, J.A., Till, J.E., Wakeford, R., Walsh, L., and Dauer, L.T. 2018. "Implications of Recent Epidemiologic Studies and the Linear-Nonthreshold Model for Radiation Protection." Journal of Radiation Protection. 38,1217-1233.

National Council on Radiation Protection and Measurements. 2018. *Implications of Recent Epidemiologic Studies for the Linear-Nonthreshold Model and Radiation Protection*. NCRP Commentary No. 27. National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland. R.E. Shore (Chair), L.T. Dauer (Co-Chair), H.L. Beck, E.A. Caffrey, S. Davis, **H.A. Grogan**, R.N. Hyer, F.A. Mettler Jr., R.J. Preston, J.E. Till, R. Wakeford, L. Walsh.

Yoder, R.C., L.T. Dauer, S. Balter, J.D. Boice, **H.A. Grogan**, M.T. Mumma, C.N. Passmore, L.N. Rothenberg, R.J. Vetter. 2018. "Dosimetry for the study of medical radiation workers with a focus on the mean absorbed dose to the lung, brain and other organs." *International Journal of Radiation Biology*, DOI: 10.1080/09553002.2018.1549756.

Till, J.E., H.L. Beck, **H.A. Grogan**, E.A. Caffrey. 2017. "A Review of Dosimetry Used in Epidemiological Studies Considered to Evaluate the Linear No-Threshold (LNT) Dose-response Model for Radiation Protection." *International Journal of Radiation Biology*, DOI: 10.1080/09553002.2017.1337280.

National Council on Radiation Protection and Measurements. 2017. *Guidance for Emergency Response Dosimetry*. NCRP Report No. 179. National Council for Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland. Scientific Committee Members – S.V. Musolino and A. Salame-Alfie (Co-Chairs), J.L. Bader, D.J. Blumenthal, B.R. Buddemeier, **H.A. Grogan**, W.E. Irwin III, G. Klemic, G.R. Komp, R.W. McBurney, J. Prud´homme, R.K. Schlueck, J.S. Wieder. October 2.

Beck, H.L., J.E. Till, J.W. Aanenson, **H.A. Grogan**, J.W. Aanenson, H.J. Mohler, S.S. Mohler, P.G. Voillequé. 2017. "Red Bone Marrow and Male Breast Doses for a Cohort of Atomic Veterans." *Radiat Res*. 187, 221–228.

National Council on Radiation Protection and Measurements. 2014. *Decision Making for Late-Phase Recovery from Major Nuclear or Radiological Incidents*. NCRP Report No. 175. National Council for Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland. Scientific Committee Members: S.Y. Chen (Chair), D.J. Barnett, B.R. Buddemeier, V.T. Covello, K.A. Kiel, J.A. Lipoti, D.M. Scroggs, A. Wallo. Advisors – D.J. Allard, J.D. Edwards, **H.A. Grogan**, A.F. Nisbet. Consultants – J.J. Cardarelli, II, J.A. MacKinney, M.A. Noska.

Till, J.E., H.L. Beck, J.W. Aanenson, **H.A. Grogan**, H.J. Mohler, S.S. Mohler, P.G. Voillequé. 2014. "Military Participants at U.S. Atmospheric Nuclear Weapons Testing-Methodology for Estimating Dose and Uncertainty." *Radiat Res*. 181, 471–484.

J.E. Till, **H.A. Grogan**, H.J. Mohler, J.R. Rocco, S.S. Mohler. 2012. "An Integrated Approach to Data Management, Risk Assessment, and Decision Making." *Health Physics*, 102 (4):367-377. April.

Mohler, H.J., **H.A. Grogan**, J.R. Rocco, R.F. Kiefer, and J.E. Till. 2012. "RACER: Dynamic Use of Environmental Measurement Data for Decision Making and Communication." *Operational Radiation Safety*, Vol. 102, Suppl 1. February.

McKinley, I.G., **H.A. Grogan**, and L.E. McKinley. 2011. "Fukushima: Overview of Relevant International Experience." *Journal of Nuclear Fuel Cycle and Environment* 18 (2): 89–100.

National Council on Radiation Protection and Measurement (NCRP). 2011. *Radiological Health Protection Issues Associated With Use of Active Detection Technology Systems for Detection of Radioactive Threat Materials*. NCRP Commentary No. 22. NCRP, Bethesda, Maryland. September.

Rood, A.S., P.G. Voillequé, S.K. Rope, **H.A. Grogan**, and J.E. Till. 2008. "Reconstruction of atmospheric concentrations and deposition of uranium and decay products released from the former uranium mill at Uravan, Colorado." *J. Env. Radioactivity*. 99:1258–1278.

Mohler, H.J., K.R. Meyer, **H.A. Grogan**, J.W. Aanenson, and J.E. Till. 2004. "Application of NCRP Air Screening Factors for Evaluating both Routine and Episodic Radionuclide Releases to the Atmosphere." *Health Physics* 86 (2): 135–144.

J.E. Till and **H.A. Grogan**. 2006. "Applied Modeling and Computations in Nuclear Science: the Foundation for Risk Assessment and Decision Making." In *Applied Modeling and Computations in Nuclear Science*. ACS Symposium Series 945. Edited by T.M. Semkow, S. Pommé, S.M. Jerome, and D.J. Strome. American Chemical Society, Washington, D.C.

H.A. Grogan, J.W. Aanenson, P.D. McGavran, K.R. Meyer, S.S. Mohler, H. J. Mohler, J.R. Rocco, A.S. Rood, J.E. Till, and L.H. Wilson. 2006. "Applied Modeling of the Cerro Grande Fire at Los Alamos: An Independent Analysis of Exposure, Health Risk, and Communication with the Public." In *Applied Modeling and Computations in Nuclear Science*. ACS Symposium Series 945. Edited by T.M. Semkow, S. Pommé, S.M. Jerome, and D.J. Strome. American Chemical Society, Washington, D.C.

Till, J.E., A.S. Rood, P.G. Voillequé, P.D. McGavran, K.R. Meyer, **H.A. Grogan**, W.K. Sinclair, J.W. Aanenson, H.R. Meyer, H.J. Mohler, S.K. Rope, and M.J. Case. 2002. "Risks to the Public from Historical Releases of Radionuclides and Chemicals at the Rocky Flats Environmental Technology Site." *Journal of Exposure Analysis and Environmental Epidemiology* 12: 355–372.

Rood, A.S., **H.A. Grogan**, and J.E. Till. 2002. "A Model for a Comprehensive Evaluation of Plutonium Released to the Air from the Rocky Flats Plant, 1953–1989." Health Physics 82 (2).

Grogan, H.A., W.K. Sinclair, and P.G. Voillequé. 2001. "Risks of Fatal Cancer from Inhalation of Plutonium-239,240 by Humans: A Combined Four Method Approach with Uncertainty Evaluation." *Health Physics* 80 (5): 447–461.

Rood, A.S., **H.A. Grogan** and J.E. Till. 2001. "A Model for a Comprehensive Assessment of Exposure and Lifetime Cancer Incidence Risk from Plutonium Released from the Rocky Flats Plant, 1953-1989." *Health Physics* 82 (2): 182–212.

Little, R.H., **H.A. Grogan,** G.M. Smith, and C. Torres. 1993. "Land Disposal Practices in Europe and North America." *J. Inst. Water and Environmental Management* 7 (4): 354–363.

McKinley, I.G. and **H.A. Grogan.** 1991. "Radionuclide Sorption Databases for Swiss Repository Safety Assessments." *Radiochimica Acta* 52/53: 415–420.

McKinley, I.G. and **H.A. Grogan.** 1991. "Consideration of Microbiology in Modeling the Near-Field of a L/ILW Repository." *Experientia* 47: 573–577.

West, J.M., **H.A. Grogan,** and I.G. McKinley. 1991. "The Role of Microbiology in the Geological Containment of Radioactive Wastes." In *Diversity of Environmental Biogeochemistry.* Developments in Geochemistry: 6. Edited by J. Berthelin. Elsevier Science Publishers B V. 205–215.

Van Dorp, F., **H.A. Grogan,** and C. McCombie. 1989. "Disposal of Radioactive Waste." International Journal of Radiation Applications and Instrumentation Part C. *Radiat. Phys. Chem*. 34 (2): 337–347

Grogan, H.A. and F. van Dorp. 1988. "The Reliability of Environmental Transfer Models Applied to Waste Disposal." In *Reliability of Radioactive Transfer Models.* Edited by G. Deems. Elsevier Applied Science. EUR 11367. 276–284.

Grogan, H.A., N.G. Mitchell, M.J. Minski, and J.N.B. Bell. 1988. "Pathways of Radionuclides from Soils to Wheat." In *Pollutant Transport and Fate in Ecosystems.* Edited by P.J. Coughtrey, M.H. Martin, and M.H. Unsworth. Oxford: Blackwell Scientific Publications. 353–370.

Bell, J.N.B., M.J. Minski, and **H.A. Grogan.** 1988. "Plant Uptake of Radionuclides." *Soil Use and Management* 4 (3): 76–84.

Nair, S., **H.A. Grogan,** M.J. Minski, and J.N.B. Bell. 1983. "Models for the Prediction of Doses from the Ingestion of Terrestrial Foods." In *Ecological Aspects of Radionuclide Releases.* Edited by P.J. Coughtrey, J.N.B. Bell, and T.M. Roberts. Oxford: Blackwell Scientific. 141–159.

Conference Proceedings

Caffrey, E.A., C.D. Mangini, A.S. Rood, **H.A. Grogan**, H.J. Mohler, J.R. Rocco, J.E. Till, J. Cartwright, T. Matthews, C. Shaw. 2019. Implementation of a dose-based compliance system for WCS. Waste Management Symposia 2019. Phoenix, AZ. 3–7 March.

Anderson, T., K. Jones, J. Simmonds, L. Hubbard, **H. Grogan**, E. Waller. 2016. A Tool for Implementing the UNSCEAR Methodology for Estimating Human Exposures from Radioactive Discharges. 14th International Congress of the International Radiation Protection Association. Cape Town, South Africa. 9–14 May.

Grogan, H.A. and J.E. Till. 2012. Rebuilding Trust in the Science of Radiation Protection. 13th International Congress of the International Radiation Protection Association. Glasgow, Scotland. 13–18 May.

Till, J.E. and **H.A. Grogan**. 2009. It's the Dose! – Strategies for Environmental Dose Reconstruction and Risk Assessment. Environmental Dose Reconstruction and Risk Assessment for Litigation and Planning Purposes. Phoenix, Arizona.

Rood, A.S., B. Jacobs, P. Shanahan, H.J. Mohler, J.W. Aanenson, J.R. Rocco, L. Hay Wilson, **H.A. Grogan,** and J.E. Till. 2009. "Overview of Environmental Transport Models Contained in the Risk Analysis, Communication, Evaluation, and Reduction (RACER) Software Tools at Los Alamos National Laboratory." In *Proc.Waste Management for the Nuclear Renaissance*, Waste Management 2009. www.wmsym.org. March 1–5, Phoenix, Arizona.

Mohler, H.J., J.W. Aanenson, **H.A. Grogan**, and J.E. Till. 2005. "Creating Spatially-Linked Data and Risk Evaluation Tools to Support Community Participation and Decision Making for a Contaminated Site." *Proceedings of EnviroInfo 2005*. 19th International Conference Informatics for Environmental Protection. September, 7–9. Networking Environmental Information. Brno, Czech Republic.

Grogan, H.A., J.E. Till, K.R. Meyer, and H.J. Mohler. 2004. "Involving Stakeholders and Tailoring Environmental Databases for Shared Analysis of a Contaminated Site." *Proceedings of the 18th International Conference Informatics for Environmental Protection, Sh@ring.* CERN, Geneva, Switzerland, October 21–23.

Sumerling, T.J., **H.A. Grogan,** P. Zuidema, and F. van Dorp. 1993. "Scenario Development for Safety Demonstration for Deep Geological Disposal in Switzerland." *Proceedings of the 4th Annual International Conference on High-Level Radioactive Waste Management.* Las Vegas, Nevada, April 26–30, 1993. American Society of Civil Engineers and the American Nuclear Society.

Smith, G.M. and **H.A. Grogan.** 1992. "Taking Account of the Biosphere in HLW Assessment." *Proceedings of the Third International Conference on High Level Radioactive Waste Management.* Las Vegas, Nevada, April 12–16, 1992. American Society of Civil Engineers and the American Nuclear Society.

Grogan, H.A. and K.J. Worgan. 1991. "Testing Near-Field Models for Deep Disposal." In *Proceedings of the Technical Workshop on Near-Field Performance Assessment for High-Level Waste.* Madrid, Spain, October 15–17, 1990. Edited by P. Sellin, M. Apted, and J. Gago. SKB Technical Report 91–59. Swedish Nuclear Fuel and Waste Management Co. Available from Box 5864, S–10248, Stockholm, Sweden.

Zuidema, P., F. van Dorp, **H.A. Grogan,** and M. Hugi. 1991. "Radioactive Waste Disposal In Switzerland: The Impact of Safety Criteria on Repository Design and Hydrogeological

Requirements." In Proceedings *Water Resources in Mountainous Regions.* Edited by A. Parmaux. *Memories of the 22nd Congress of IAH,* Vol. XXII Part, GEOLEP–EPFL. CH-1015 Lausanne.

Grogan, H.A. 1991. "BIOMOVS Contribution to Long Term Radioactive Waste Assessment." *Proceedings of the Symposium on the Validity of Environmental Transfer Models.* Stockholm, Sweden, October 1990. Swedish Radiation Protection Institute.

Schenker-Wicki, A., F. van Dorp, and **H.A. Grogan.** 1988. "The Use of Multi-Criteria Analysis (MCA) for Evaluating Feasible Countermeasures After an Accidental Release of Radioactivity." IV Symposium Internationale de Radioécologie Impact des Accidents d'Origine Nucléaire sur l'Environment, March 14–19, Cadarache, France.

Grogan, H.A. and F. van Dorp. 1986. "Modelling the Behaviour of Radionuclides in the Biosphere for the Safety Assessment of a High-Level Waste Repository, First Estimates of Uncertainties." In *CEC Seminar on The Cycling of Long-lived Radionuclides in the Biosphere: Observations and Models. Madrid, Spain, 1986.*

Grogan, H.A. and F. van Dorp. 1986. "The Importance of Models for Predicting the Behaviour and Impact of Radionuclides Released to the Environment." Paper presented at the Symposium Radioaktivitätsmessungen in der Schweiz nach Tschernobyl und ihre wissenschaftliche Interpretation, October 20–24, Bern, Switzerland.

McKinley, I.G., **H.A. Grogan,** and J.M. West. 1985. "Quantitative Modelling of the Effects of Microorganisms on Radionuclide Transport from a HLW Repository*." Proceedings of the NEA Workshop on the Effects of Natural Organic Compounds and of Microorganisms on Radionuclide Transport*. 50–66.

West, J.M., I.G. McKinley, **H.A. Grogan,** and S.C. Arme. 1985. "Laboratory and Modeling Studies of Microbial Activity in the Near Field of a HLW Repository." *Proceedings of the Stockholm MRS Meeting, Scientific Basis for Radioactive Waste Management, IX.*, Edited by L.O. Werne. 533–538.

Published Technical Reports

(excludes technical notes, internal reports, and commercial reports)

EPRI. 2016. *Batch and Continuous Releases to the Atmosphere from Nuclear Power Plants: Comparison of Environmental Concentrations and Doses*. 3002008166. Electric Power Research Institute, Palo Alto CA. November.

EPRI. 2014. *EPRI Recommendations for the National Academies' Pilot Study of Cancer Risks in Populations Around Nuclear Facilities: Feasibility Study*. 3002003163. Electric Power Research Institute, Palo Alto CA. November.

EPRI. 2011. *Technical Considerations for the Nuclear Regulatory Commission/ National Academy of Sciences Proposed Study: Cancer in Populations Living Near Nuclear Facilities*. 1024677. Electric Power Research Institute, Palo Alto CA. November.

New Mexico Community Foundation. 2011. Contributing Authors: H.J. Mohler, J.E. Till, **H.A. Grogan**, S. Wolters, E. Archuleta, P. Medvick, S. Price, D. Cuthbertson, and R. Rivera. *Audit Report: Evaluation of the Completeness and Accuracy of the Environmental Monitoring Data Provided by Los Alamos National Laboratory and the New Mexico Environment Department Oversight Bureau to the RACER Database.* Report Prepared by Risk Assessment Corporation for New Mexico Community Foundation. February.

Risk Assessment Corporation (RAC). 2009. Contributing Authors: J.W. Aanenson, **H.A. Grogan**, B. Jacobs, G.G. Killough, K.R. Meyer, H.J. Mohler, S. Mohler, J.R. Rocco, A.S. Rood, P. Shanahan, E.A. Stetar, L. Hay Wilson, and J.E. Till. *Risk Analysis, Communication, Evaluation, and Reduction at LANL. Ranking Tool Methodology.* RAC Report No. 35-RACER LANL-2008-FINAL. Risk Assessment Corporation. Neeses, South Carolina. April.

Aanenson, J.W., D. Gonzales, **H.A. Grogan,** S.S. Mohler, J.R. Rocco, E.A. Stetar, L. Hay Wilson, and J E. Till. 2007. *Risk Analysis, Communication, Evaluation, and Reduction at LANL. Stakeholder Involvement Summary*. RAC Report No. 21-RACER LANL-2007-FINAL. Risk Assessment Corporation. Neeses, South Carolina. September.

Wilson, L.H, J.R. Rocco, S. Mohler, E.A. Stetar, **H.A. Grogan**, H.J. Mohler, J. Wilson, B. Jacobs, P. G. Voillequé, and J E. Till. 2007. *Risk Analysis, Communication, Evaluation, and Reduction at LANL. Decision Support Tool Methodology*. RAC Report No. 18-RACER LANL-2007-FINAL. Risk Assessment Corporation. Neeses, South Carolina. July.

Stetar, E.A, L.H. Wilson, J.R. Rocco, S. Mohler, **H.A. Grogan,** and J E. Till. 2007. *Risk Analysis, Communication, Evaluation, and Reduction at LANL. Focus Group Data Evaluation*. RAC Report No. 19-RACER LANL-2007-FINAL. Risk Assessment Corporation. Neeses, South Carolina. July.

Kosson, D., **H. Grogan**, K. Higley, R. Maddalena, and C. Whipple. 2004. *Merit Panel Review of the C-Tank Farm Closure Performance Assessment.* Final Report. Submitted to CH2M-Hill Hanford Group, Inc. April 20.

Aanenson, J.W., J. Goldberg, **H.A. Grogan**, L.H. Wilson, G.G. Killough, K.R. Meyer, H.J. Mohler, S. Mohler, J.R. Rocco, A.S. Rood, P. Shanahan, W.K. Sinclair, C. Slack, E.A. Stetar, J. Wilson, and J E. Till. 2004. *Risk Analysis, Communication, Evaluation, and Reduction at LANL-Contemporary Risk Assessment: Demonstration of an Integrated Methodology*. RAC Report No. 11-RACER LANL-2004-FINAL. Risk Assessment Corporation. Neeses, South Carolina. December.

Mohler, H.J., K.R. Meyer, J.W. Aanenson, and **H.A. Grogan**. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Task 3: Calculating and Communicating Risks: Observations and Recommendations*. RAC Report No.15-NMED-2001-FINAL(Rev.1). Prepared by Risk Assessment Corporation, Neeses, South Carolina, for New Mexico Environment Department, Santa Fe. June 12.

Rood, A.S., J.W. Aanenson, S.S. Mohler, P.D. McGavran, H.J. Mohler, and **H.A. Grogan**. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Task 1.7: Final Report on Estimated Risks from Releases to Air.* RAC Report No. 3-NMED-2002-FINAL(Rev.1). Prepared by Risk Assessment Corporation, Neeses, South Carolina, for New Mexico Environment Department. Santa Fe. June 12.

Mohler, S.S., J.W. Aanenson, **H.A. Grogan**, L. Hay Wilson, P.D. McGavran, K.R. Meyer, H.J. Mohler, J.R. Rocco, and A.S. Rood. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Summary Report.* RAC Report No. 5-NMED-2002-FINAL. Prepared by Risk Assessment Corporation, Neeses, South Carolina for New Mexico Environment Department. Santa Fe. June 12.

Grogan, H.A., A.S. Rood, J.W. Aanenson, and E.B. Liebow. 2002. *A Risk-based Screening Analysis for Radionuclides Released to the Columbia River from Past Activities at the U.S. Department of Energy Nuclear Weapons Site in Hanford, Washington*. RAC Report No. 3-

CDC-Task Order 7-2000-FINAL. Prepared by Risk Assessment Corporation, Neeses, South Carolina, for the Centers for Disease Control and Prevention, Atlanta. November.

Till, J.E., Aanenson, J.W., Boelter, P.J., M.C. Case, M. Dreicer, **H.A. Grogan**, M.O. Langan, P.D. McGavran, K.R. Meyer, R. Meyer, H.J. Mohler, A.S. Rood, R.C. Rope, S.K. Rope, L.A. Stetar, P.G. Voillequé, T.F. Winsor, W. Yang. 2001. *Evaluation of Materials Released from the Savannah River Site. Savannah River Site Environmental Dose Reconstruction Project.* Phase II: Source Term Calculation and Ingestion Pathway Data Retrieval. RAC Report No.1-CDC-SRS-1999-Final. Final Report. Prepared by *Radiological Assessments Corporation,* Neeses, South Carolina for Centers for Disease Control and Prevention. April.

Grogan, H.A., W.K. Sinclair, and P.G. Voillequé, 2000. *Assessing Risks of Exposure to Plutonium.* RAC Report No. 5-CDPHE-RFP-1998-FINAL(Rev.2). Prepared by *Radiological Assessments Corporation*, Neeses, South Carolina for Colorado Department of Public Health and Environment. February.

Killough, G. G., A.S. Rood, J.W. Aanenson, K.R. Meyer, **H.A. Grogan**, W.K. Sinclair, and J.E. Till. 2000. *Task 5: Independent Calculation*. Radionuclide Soil Action Level Oversight Panel. RAC Report No. 16-RSALOP-RSAL-1999-FINAL. Risk Assessment Corporation. February.

Sumerling, T.J., **H.A. Grogan** and P.A. Smith. 1999. *Scenario Development for Kristallin-1*. Nagra Technical Report Series NTB 93–13. CH–5430 Wettingen, Switzerland.

Grogan, H.A., P.D. McGavran, H.R. Meyer, K.R. Meyer, H.J. Mohler, A.S. Rood, W.K. Sinclair, P.G. Voillequé and J.M. Weber. 1999. *Technical Summary Report for the Historical Public Exposures Studies for Rocky Flats Phase II.* RAC Report No. 14-CDPHE-RFP-1999-FINAL. Prepared by *Radiological Assessments Corporation*. Neeses, South Carolina for Colorado Department of Public Health and Environment. September.

Meyer, K. R., **H.A. Grogan**, and J.E. Till. 1999. RAC *Responses to Public Questions and Concerns.* RAC Report No.12-CDPHE-1999-FINAL. Prepared by *Radiological Assessments Corporation*, Neeses, South Carolina for Colorado Department of Public Health and Environment. August.

Rood, A.S. and **H.A. Grogan**. 1999. *Estimated Exposure and Lifetime Cancer Incidence Risk from 903 Area Plutonium Releases at the Rocky Flats Plant.* RAC Report No. 1-CDPHE-RFP-1999-FINAL. Prepared by *Radiological Assessments Corporation.* Neeses, South Carolina for Colorado Department of Public Health and Environment. August.

Rood, A.S. and **H.A. Grogan**. 1999. *Estimated Exposure and Lifetime Cancer Incidence Risk from Plutonium Released from the 1957 Fire at the Rocky Flats Plant.* RAC Report No. 2-CDPHE-RFP-1999-FINAL. Prepared by *Radiological Assessments Corporation.* Neeses, South Carolina for Colorado Department of Public Health and Environment. August.

Rood, A.S. and **H.A. Grogan**. 1999. *Estimated Exposure and Lifetime Cancer Incidence Risk from Plutonium Released from the 1969 Fire at the Rocky Flats Plant.* RAC Report No. 7-CDPHE-RFP-1999-FINAL. Prepared by *Radiological Assessments Corporation.* Neeses, South Carolina for Colorado Department of Public Health and Environment. August.

Rood, A.S. and **H.A. Grogan**. 1999. *Comprehensive Assessment of Exposure and Lifetime Cancer Incidence Risk from Plutonium Released from the Rocky Flats Plant, 1953–1989.* RAC Report No. 13-CDPHE-RFP-1999-FINAL. Prepared by *Radiological Assessments Corporation*, Neeses, South Carolina, for Colorado Department of Public Health and Environment. September.

Rope S.K., K.R. Meyer, M.J. Case, **H.A. Grogan**, D.W. Schmidt, M. Dreicer, T.F. Winsor, and J.E. Till. 1999. *Evaluation of Environmental Data for Historical Public Exposures Studies on*

Rocky Flats. RAC Report No. 1-CDPHE-RFP-1997-FINAL(Rev.1). Prepared by *Radiological Assessments Corporation,* Neeses, South Carolina, for Colorado Department of Public Health and Environment. August.

Centers for Disease Control and Prevention. 1998. *Issues Related to Estimating Doses Due to I-131 Releases to the Atmosphere from the Hanford Site*. Technical Workshop Report. Prepared by **H.A. Grogan**. RAC Report No. 2-CDC-Task Order 4-1998-FINAL. *Radiological Assessments Corporation.*

Centers for Disease Control and Prevention. 1996. *Calculating and Interpreting Radiological Doses and Risks for Individuals Exposed to Radionuclides Due to Historical Releases from the Hanford Nuclear Reservation*. Technical Workshop Report. Prepared by **H.A. Grogan**. RAC Report No. 5-CDC-Task Order 2-1996-FINAL. *Radiological Assessments Corporation.*

Stetar, E.A., M.J. Case, L.W. Bell, **H.A. Grogan**, K.R. Meyer, H.R. Meyer, S.K. Rope, D.W. Schmidt, T.F. Winsor, and J.E. Till. 1995. *Identifying Sources of Environmental Monitoring and Research Data. Savannah River Site Dose Reconstruction Project*. RAC Report No. 2 CDC-SRS-95-Final. *Radiological Assessments Corporation*.

Meyer, K.R., P.D. McGavran, P.G. Voillequé, **H.A. Grogan**, L.W. Bell, H.R. Meyer, S.K. Rope, and J.E. Till. 1995. Phase I Data Retrieval and Assessment. *Evaluation of Materials Released from the Savannah River Site*. RAC Report No. 6 CDC-SRS-95-Final. *Radiological Assessments Corporation*.

Grogan, H.A., M.O. Langan, H.R. Meyer, E.A. Stetar, and J.E. Till. 1995. *Identification and Cataloging of Information Sources. Savannah River Site Dose Reconstruction Project*. RAC Report No. 3 CDC-SRS-95-Final. *Radiological Assessments Corporation*.

Watkins, B.M. and **H.A. Grogan**. 1994. *Overview of Information Concerning Microbial Effects on Radioactive Waste Repositories*. Nagra Technical Report Series NTB 93–40. CH–5430 Wettingen, Switzerland.

Grogan, H.A., K.R. Meyer, P.G. Voillequé, S.K. Rope, M.J. Case, H.R. Meyer, R.E. Moore, T. Winsor, and J.E. Till. 1994. *Verification of Phase I Source Term & Uncertainty Estimates*.Final Task 2 Report prepared by *Radiological Assessments Corporation* for the Colorado Department of Public Health and Environment.

Little, R.H., C. Torres, D. Charles, **H.A. Grogan**, I. Simon, G.M. Smith, T.J. Sumerling, and B.M. Watkins. 1993. Post-Disposal Safety Assessment of Toxic and Radioactive Waste: Waste Types, Disposal Practices, Disposal Criteria, Assessment Methods and Post-Disposal Impacts. EUR 14627 EN. Commission of the European Communities. ISBN 92-826-5610-1, Luxembourg.

Grogan, H.A., K.J. Worgan, G.M. Smith, and D.P. Hodgkinson. 1992. *Post–Disposal Implications of Gas Generated from Low and Intermediate Level Wastes*. Nagra Technical Report Series NTB 92–07. CH–5430 Wettingen, Switzerland.

Grogan, H.A., D. Charles, and G.M. Smith. 1991. *An Outline Methodology for Comparative Assessment of Environmental Impacts from Landfilled Wastes*. DoE Report No. DOE/HMIP/RR/91/058. Available from Romney House, 43 Marsham Street, London SW1P 3PY, United Kingdom.

Baeyens, B., **H.A. Grogan**, and F. van Dorp. 1991. *Biosphere Modelling for a Deep Radioactive Repository: Treatment of the Groundwater–Soil Pathway*. PSI Technical Report PSI Bericht Nr. 98. CH–5232 Villigen PSI, Switzerland.

Grogan, H.A., B. Baeyens, H. Müller, and F. van Dorp. 1991. *Biosphere Modelling for a Deep Radioactive Repository: Site–Specific Consideration of the Groundwater–Soil Pathway*. PSI Technical Report PSI Bericht Nr. 99. CH–5232 Villigen PSI, Switzerland.

Stenhouse, M.J. and **H.A. Grogan**. 1991. *Review of Reactions of Hydrogen and Methane in the Geosphere and Biosphere*. Nirex Safety Series Report, NSS/R262. Available from UK Nirex Ltd, Curie Ave, Harwell, Oxon, OX11 0RH, United Kingdom.

Grindrod, P., M.J. Williams, **H.A. Grogan**, and M.D. Impey. 1990. *STRENG: A Source Term Model for Vitrified High Level Waste*. Nagra Technical Report Series NTB 90–48. CH–5430 Wettingen, Switzerland.

Grogan, H.A., ed. 1989. *BIOMOVS Technical Report 6 – Scenario B2: Irrigation with Contaminated Groundwater.* National Institute of Radiation Protection, Box 60204, S-10401 Stockholm, Sweden.

Grogan, H.A. and I.G. McKinley. 1989. *An Approach to Microbiological Modelling Application to the Near–Field of a Swiss Low/Intermediate Level Waste Repository*. Nagra Technical Report Series NTB 86–09. CH–5430 Wettingen, Switzerland

Grogan, H.A. and F. van Dorp. 1986. *BIOMOVS Test Scenario Model Comparison Using BIOPATH. EIR Bericht Nr. 599, CH–5232 Villigen PSI, Switzerland.* Nagra Technical Report Series NTB 86–23. CH–5430 Wettingen, Switzerland.

Grogan, H.A. 1985. "Biosphere Modeling." EIR Bulletin Nr. 56 23. CH–5232 Villigen PSI, Switzerland.

Grogan, H.A. 1985. *Concentration Ratios for BIOPATH: Selection of the Soil-to-Plant Concentration Ratio Database. EIR Bericht Nr. 575, CH–5232 Villigen PSI, Switzerland.* Nagra Technical Report Series NTB 85–16. CH–5430 Wettingen, Switzerland.

Grogan, H.A. 1985. *Biosphere Modelling of a HLW Repository – Scenario and Parameter Variations. EIR Bericht Nr. 561, CH–5232 Villigen PSI, Switzerland.* Nagra Technical Report Series NTB 85–48. CH–5430. Wettingen, Switzerland.

McKinley, I.G., J.M. West, and **H.A. Grogan**. 1985. *An Analytical Overview of the Consequences of Microbial Activity in a Swiss HLW Repository. EIR Bericht Nr. 562, CH–5232 Villigen PSI, Switzerland.* Nagra Technical Report Series NTB 85–43. CH–5430 Wettingen, Switzerland.

Grogan, H.A., J.N.B. Bell, M.J. Minski, and S. Nair. 1984. *An Experimental Study of the Time Dependence of Uptake from Soil of Cs–137, Ru–106, Ce–144, and Tc–99 into Green Vegetables, Wheat and Potatoes.* CEGB Report TPRD/B/0416/N84. Berkeley Nuclear Laboratories, Berkeley, Glos, GL13 9PB, United Kingdom.