

---

**EDWARD F. MAHER, Sc.D., CHP**

*Senior Health Physicist*

*Dade Moeller & Associates, Inc.*

*One Acton Place, Suite 201*

*Acton, Massachusetts 01720*

*(978) 929-9133 - Fax 929-9134*

---

*Specializing in Occupational and Environmental Health Sciences*

---

**EDUCATION/QUALIFICATIONS**

Sc.D., Radiological Health and Protection, Harvard University, 1985

M.S., Biomedical Engineering, Worcester Polytechnic Institute, 1973

B.S., Electrical Engineering, Lowell Technological Institute, 1971

Certified Health Physicist for Comprehensive Practice, American Board of Health Physics, June 1986; recertified in 1990, 1994, 1998, 2002 and 2006.

**PRESENT POSITION**

Senior Health Physicist, Dade Moeller & Associates, Inc.

**PROFESSIONAL SUMMARY**

Dr. Maher is a Certified Health Physicist with more than 30 years of experience conducting and managing radiological, safety, and environmental protection programs applicable to commercial clients and Federal agencies such as the U.S. Departments of Energy (DOE) and Defense (DOD). He is a retired U.S. Air Force (USAF) Colonel with extensive experience in designing, developing, and implementing nuclear, biological, and chemical warfare defense strategies.

Dr. Maher served as the Supervisor for the Environmental, Health, and Safety Group at Framatome-ANP. He was responsible for overall staff management and business development activities in health physics, health and safety, environmental engineering, and other specialties. In 2002 and 2003, he was the Environmental Report manager for a consortium of utility clients submitting a Nuclear Regulatory Commission (NRC) license application for a uranium enrichment plant in Tennessee; he led a 20-member multidisciplinary team that wrote a comprehensive report assessing the environmental, socioeconomic, and radiological impacts of building, operating, and decommissioning the plant.

Dr. Maher has managed environmental, health, and safety organizations involved with risk management, emergency response, and business continuity planning. He directed the USAF Radiation Assessment Team responsible for providing immediate and global responses to nuclear weapon accidents. He led a comprehensive study on defensive actions to ensure nuclear plant control room habitability following a terrorist attack involving chemical warfare agents or toxic industrial chemicals. The study considered engineering, mechanical, personnel protective, and administrative actions for potential use against the full spectrum of chemical warfare agents and associated delivery systems.

Dr. Maher performed a threat assessment and vulnerability analysis for a major energy company attempting to redesign its emergency response, crisis communication, and business continuity plans in the wake of the World Trade Center attack. The threat and vulnerability analyses considered natural disasters, catastrophic asset failures, terrorist acts, and losses in the national communication infrastructure. The analyses used risk-based methodologies to identify vulnerabilities of critical assets to specific threats and provide senior management with a decision-making tool for applying resources to achieve the greatest risk reduction.

Dr. Maher has completed the Risk Assessment Methodology for Water (RAM-W) course developed and sponsored by Sandia National Laboratories, the U.S. Environmental Protection Agency, and the American Water Works Association Research Foundation. He is a certified trainer for RAM-W.

## **EXPERIENCE AND ACCOMPLISHMENTS**

2004 – Present                    *Dade Moeller & Associates*

Dr. Maher is Manager of Task 5, Dose Estimation and Reporting, providing support to the National Institute for Occupational Safety and Health to perform individual dose reconstructions for claimants under the Energy Employees Occupational Illness Compensation Program Act of 2000.

2002 – 2004                    *Framatome-ANP, Framatome ANP DE&S*

As Supervisor of the Environmental, Health, and Safety (EHS) Group, Dr. Maher managed overall staff and business development activities in health physics, health and safety, environmental engineering, and related specialties. He supervised a staff of 12 and two contractors that provided a wide range of EHS services to nuclear facilities.

1997 – 2002                    *Duke Engineering & Services*

As Business Development Manager for Specialty Services' EHS business practices, Dr. Maher was responsible for business development activities in health physics, radiological laboratory analyses, emergency management, and several other EHS specialties. He served as Course Supervisor for the company's 40-hour Biotechnology Radiation Safety Officer Training Course.

As Director of the Environmental Laboratory, Dr. Maher provided ongoing environmental radioanalytical, internal and external dosimetry, and consulting services to clients worldwide. He oversaw laboratory technical and business area services, which included environmental sample analyses, National Voluntary Laboratory Accreditation Program (NVLAP)-certified thermoluminescent dosimetry, *in situ* gamma spectroscopy, sampling procedure consulting, analytical measurement quality control standards preparation, and environmental radiological program reviews and audits. In addition, he managed the staff, budget and cost control, and business development.

1996 – 1997                    *Yankee Atomic Electric Company*

Dr. Maher was Director of the Yankee Atomic Environmental Laboratory. Under his leadership, this group provided ongoing environmental radioanalytical, internal and external dosimetry, and consulting services for the Maine Yankee, Vermont Yankee, Yankee Rowe, Pilgrim, Seabrook, and Millstone Nuclear Power Stations. He managed the staff, budget and cost control, and business development. He oversaw laboratory technical and business area services, which included environmental sample analyses, NVLAP-certified thermoluminescent dosimetry, sampling procedure consulting, analytical measurement quality control standards preparation, and environmental radiological program reviews and audits.

1994 – 1996                    *Arthur D. Little, Inc.*

As the Associate Director of the Occupational Safety and Health Directorate, Dr. Maher managed 18 multidisciplinary health and safety professionals. He was responsible for the Directorate's government business development and budget, and for leading government and commercial proposal efforts for occupational health and safety, health physics, industrial hygiene, and process safety management. He was the

Key Account Manager for all Directorate USAF contract work, and was Program Manager for two USAF subcontracts with combined potential annual revenues of \$5 to \$10 million.

As Manager of the Radiation Technology and Policy Unit, Dr. Maher managed four health and medical physicists providing consulting services to private, international, state, and Federal clients. He developed and controlled the unit's budget authorizations, revenues and costs, and strategic business initiatives. In addition, he managed the staff and subcontractors as well as multidisciplinary teams conducting comprehensive management system audits at 12 DOE sites.

1984 – 1994

*U.S. Air Force*

Dr. Maher held the following positions at the Armstrong Laboratory, Brooks Air Force Base:

- **Division Chief, Bioenvironmental Engineering Division.** Dr. Maher managed and directed comprehensive environmental and occupational health services support to USAF installations worldwide. Specialty service areas included air and water quality; medical, environmental, and occupational health physics; hazardous waste and material management; and environmental noise research. Dr. Maher managed combined in-house and contractual resources of \$59M per year and an in-house staff of 87 professional, technical, and administrative support personnel.
- **Division Chief, Radiation Services Division.** Dr. Maher directed a wide range of health physics support services for USAF installations. Project and representative support services included environmental, medical, and occupational radiological protection consulting and field investigations; radioanalytical laboratory and radiation dosimetry services; decontamination and decommissioning services; radioactive source permitting and transportation safety assessments; and radiological accident contingency response planning and risk assessment. He directed the USAF Radiation Assessment Team, responsible for providing immediate and global responses to nuclear weapon accidents and mishaps in concert with the DOE Accident Response Group. In addition, he developed, implemented, and directed the USAF Radon Assessment and Mitigation Program, which measured indoor radon levels in dependent housing, DOD schools, and administrative offices at 136 bases around the world.
- **Chief, Radiation Dosimetry Branch.** Dr. Maher directed the USAF Personnel Radiation Dosimetry Program and Center, providing external and internal radiation dosimetry support and radiation instrument calibration services to 240 active-duty, reserve, and National Guard bases. He directed the processing of more than 122,000 thermoluminescent dosimeters per year and managed the Master Radiation Exposure Registry, containing 4.8 million radiation exposure records, including those of the Nuclear Test Personnel Review Program. In addition, he supervised 13 health physicists, technicians, and administrative staff members, and managed budgets and assets totaling \$4.8 million. Under his leadership, the facility achieved its first full certification under the NVLAP for radiation dosimeter processors. In addition, Dr. Maher developed the High Flier and Intrinsic Radiation Programs, which measured and assessed occupational radiation exposures to nuclear weapons handlers and cosmic and galactic radiation doses to high-altitude and space shuttle crew members.
- **Chief, Radioanalytical Services Branch.** Dr. Maher managed the Air Force's single full-service radioanalytical laboratory, serving occupational and environmental radiation protection programs at Air Force, Navy, and Defense Nuclear Agency organizations around the world. He supervised the processing of 35,000 radioanalytical samples per year, and provided expert consulting services on internal dosimetry, environmental surveillance, low-level radiological remediation, and radiocounting instrumentation. He designed and equipped the first DOD air-transportable radioanalytical laboratory

for onsite nuclear weapon accident response and low-level radioactive waste burial site remediation support. He supervised 11 health physicists, radiochemists, technicians, and administrative personnel, and managed budgets and assets of \$3.1M.

- **Chief, Non-Ionizing Radiation Branch.** Dr. Maher managed a professional staff of six, providing expert consulting services in matters related to radiofrequency, microwave, laser, ultraviolet, and infrared radiation safety and exposure assessment. He provided onsite survey measurements and overexposure investigations. In addition, he provided comprehensive documentation of these activities for medical and legal purposes.

1980 – 1984                      *Harvard University*

Mr. Maher was a full-time, USAF-sponsored doctoral student majoring in Health Physics, with minors in Aerosol Science and Biostatistics. He researched and wrote a thesis, “Characterization and Control of Radon Decay Products Inside Homes,” under the direction of Dr. Dade W. Moeller.

1976 – 1980                      *Electronics Systems Center, Hanscom Air Force Base*

As Chief, Environmental Health Services, Dr. Maher provided comprehensive industrial hygiene, environmental engineering, public health, and radiological protection services to base community and acquisition centers. He ensured that the base complied with U.S. Environmental Protection Agency, Occupational Safety and Health Administration, NRC, state, and local regulations concerning environmental and occupational health.

1973 – 1976                      *USAF School of Aerospace Medicine*

As a Project Scientist in the Laser Effects Branch, Dr. Maher conducted research and modeling studies in ocular laser damage, including biological effects of ultra-short pulsed lasers and broadband optical hazard sources. He developed laser exposure standards for the USAF Surgeon General.

## **AWARDS AND PROFESSIONAL AFFILIATIONS**

American Board of Health Physics, Board Member, 1995–2000; Chairman, 2000  
President-Elect, American Academy of Health Physics (2006–2007)  
President, American Board of Health Physics (2007–2008)  
Member, Panel of Examiners, American Board of Health Physics, 1987–1992; Chairman 1992  
William McAdams Outstanding Service Award Recipient, American Board of Health Physics, 2004  
Board of Directors, Health Physics Society, 1999–2002  
Secretary-Elect, Health Physics Society, 2002–2003  
Secretary, Health Physics Society, 2003–2005  
Fellow, Health Physics Society, 2006  
Health Physics Society National Service Award, 2006.  
Health Physics Society, Plenary Member, 1980–Present  
President, New England Chapter Health Physics Society, 2002–2003

Scientific Committee for SC-82, “Control of Radon in Houses,” National Council on Radiation Protection and Measurements, Member

Adjunct Faculty Member, Harvard School of Public Health, Environmental Health, Exposure, Epidemiology and Risk Department, Harvard University. May 2005–present.

Course Director, *Radiological Emergency Planning*, Harvard School of Public Health, Center for Continuing Professional Education, Harvard University.

Course Director, *40-Hour Radiation Safety Officer Training for Laboratory Professionals*, Harvard School of Public Health, Center for Continuing Professional Education, Harvard University.

## **PUBLICATIONS**

Dr. Maher has authored or coauthored more than 50 peer-reviewed journal articles, symposia proceedings, and reference books. A list of his publications is available on request. He is an invited lecturer at national and international meetings, workshops, symposia, short courses, and conferences.

Guest Speaker, "Radon in Homes," Wellness Seminar at the University of Texas, University of Texas Health Science Center, San Antonio, Texas, February 9, 1989.

Invited Speaker, "Indoor Radon," Family Practice Grand Rounds, Brady Green Community Health Center, San Antonio, Texas, March 8, 1989.

Session Co-Chair and Speaker, "Air Force Radon Assessment and Mitigation Program," Indoor Radon Session, 34th Annual Meeting of the Health Physics Society, Albuquerque, New Mexico, June 25-29, 1989.

Invited Speaker, "Health Hazards of Indoor Radon," American Industrial Hygiene Association Indoor Air Quality Seminar, sponsored by the Hill Country Chapter of the American Industrial Hygiene Association, San Antonio, Texas February 7-8, 1990.

Invited Speaker, "Medical and Radiological Aspects of the Chernobyl Reactor Accident," Annual Meeting of the Government Services Chapter of the American College of Emergency Physicians, San Antonio, Texas, March 7, 1990.

Keynote Session Speaker, "Measurement Methods for Radon and Progeny," Indoor Radon Session, American Industrial Hygiene Association Conference, Orlando, Florida, May 14-18, 1990.

Invited Speaker, "Radon: A Regulatory or an Environmental Health Issue?" 127th Annual Meeting of the American Veterinary Medical Association, San Antonio, Texas, July 21-25, 1990.

Invited Paper, "USAF Radon Assessment and Mitigation Program (RAMP): Experiences and Lessons Learned," presented at the 84th Annual Meeting and Exposition of the Air and Hazardous Waste Management Association, Vancouver, British Columbia, June 16-21, 1991.

Invited Speaker, "Impact of Indoor Radon on the Real Estate Industry," Resolution Trust Corporation (RTC) Environmental Seminar, San Antonio, Texas, November 13, 1991.

Invited Speaker, "Radiation Risk - A Proper Perspective?" Annual Meeting of the Association of Military Surgeons of the United States, Nashville, Tennessee, November 15-17, 1991.

Invited Speaker, "Radon Assessment and the Bureaucracy," Health Physics Student Chapter, Texas A&M University, Bryan, Texas, December 5, 1991.

- Invited Speaker, "Board Certification by the American Board of Health Physics," U.S. Army Health Physicist Workshop, Aberdeen, Maryland, November 4-6 1992.
- Invited Speaker, "American Board of Health Physics Professional Certification," Air Force Health Physics Symposium, San Antonio, Texas, May 23-26 1993.
- Maher, E. F., *A Transfer Function Determination of the Role of Large Venous Vessels in the Conduction of Bipolar Cardiac Currents*, Masters Thesis, Worcester Polytechnic Institute, Worcester, Massachusetts, July 1973.
- Peura, R. A., Lewis, G. K., Maher, E. F., Hannibal, S., and Singh, J. B., "Investigations into an Electrical Equivalent Circuit of the EKG Conduction System," *Proceedings of the 25th Annual Conference on Engineering in Medicine and Biology*, October 3, 1972.
- Maher, E. F. and Wynn, R. E., *The Transmission, Absorption Coefficient, and Index of Refraction of the B-1 and FB-111 Windscreens*, USAF School of Aerospace Medicine Technical Report 75-3, February 1975.
- Egbert, D. E. and Maher, E. F., *Corneal Damage Thresholds for Infrared Laser Exposure: Empirical Data, Model Predictions, and Safety Standards*, USAF School of Aerospace Medicine Technical Report 77-29, December 1977.
- Mikesell, G. W., Jr., and Maher, E. F., "The Effects of Severe Keratitis on Corneal Transmission," *J. Amer. Opt. Assoc.* 48-63, 1978.
- Maher, E. F., *Transmission and Absorption Coefficients for the Ocular Media of the Rhesus Monkey*, USAF School of Aerospace Medicine Technical Report 78-32, December 1978.
- Rudnick, S. N., Hinds, W. C., Maher, E. F., Price, J. M., Fujimoto, K., Gu, F., and First, M. W., *Effects of Indoor Air Circulation Systems on Radon Decay Product Concentrations*, Final Report on EPA Contract Number 68-01-6029, Harvard School of Public Health, Boston, Massachusetts, March 1982.
- Rudnick, S. N., Maher, E. F., Hinds, W. C., and First, M. W., "Surface Deposition of Radon Decay Products With and Without Enhanced Air Motion," *Proceedings of the 17th USDOE Air Cleaning Conference*, Denver, Colorado, 1982.
- Hinds, W. C., Rudnick, S. N., Maher, E. F., and First, M. W., "Control of Indoor Radon Decay Products by Air Treatment," *J.A.P.C.A.* 33: 134, 1983.
- Rudnick, S. N., Hinds, W. C., Maher, E. F., and First, M. W., "Effects of Plateout, Air Motion, and Dust Removal on Radon Decay Product Concentrations in a Simulated Residence," *Health Phys.* 45:463, 1983.
- Maher, E. F., Rudnick, S. N., and Moeller, D. W., "The Effects of Indoor Air Treatment on the Lung Dose Equivalent from Radon Decay Products," *EML Indoor Radon Workshop*, A. C. George, W. Lowder, I. Fisenne, E. O. Knutson and L. Hinchliffe, editors., National Technical Information Service, Springfield, Virginia, pp. 86-87, 1983.
- Moeller, D. W., Rudnick, S. N., and Maher, E. F., "Method and Apparatus for Reduction of Radon Decay Product Exposure," United States Patent Application Number 061585-993, 1984.

- Maher, E. F., Rudnick, S. N., and Moeller, D. W., "Removal of Radon Decay Products with Ion Generators: Comparison of Experimental Results with Theory," presented at the 18th DOE Nuclear Air Cleaning Conference, Baltimore, Maryland, 1984.
- Maher, E. F., and Laird, N. M., "EM Algorithm Reconstruction of Particle Size Distributions from Diffusion Battery Data," *J. Aerosol Sci.* 16:557, 1985.
- Laird, N. M., and Maher, E. F., "Comment on the EM Algorithm," *J. Am. Stat. Assoc.* 80:29, 1985.
- Maher, E. F., *Control and Characterization of Radon Decay Products in Residences*, Doctoral Dissertation, Harvard School of Public Health, Harvard University, Boston, Massachusetts, April 1985.
- Maher, E. F., "Radon: What is it and How do you Measure it?" presented at the 1986 Bioenvironmental Engineering Symposium, Brooks AFB, Texas May 1986.
- Rudnick, S. N., and Maher, E. F., "Surface Deposition of Radon Decay Products With and Without Enhanced Air Motion," *Health Phys.* 51:283, 1987.
- Maher, E. F., Rudnick, S. N., and Moeller, D. W., "Effective Removal of Airborne Rn-222 Decay Products Inside Buildings," *Health Phys.* 53:351, 1987.
- Maher, E. F., "Characterization and Control of Rn-222 and its Progeny in Buildings," *Avia. Space & Environ. Med.* 59:A93, 1988.
- Moeller, D. W., Rudnick, S. N., and Maher, E. F., "Removal of Airborne Radon Decay Products," *ASHRAE Transactions* 95:1, 1988.
- Moeller, D. W., Rudnick, S. N., and Maher, E. F., "Laboratory and Field Tests of a Hassock Fan-Ion Generator Radon Decay Product Removal Unit," *Radiat. Prot. Dosim.* 24:503, 1988.
- Co-Author, NCRP Report No. 103, *Control of Radon In Homes*, National Council on Radiation Protection and Measurements, Bethesda, Maryland, September 1989.
- Maher, E. F. and Case, D. R., "U.S. Air Force Radon Assessment and Mitigation Program (RAMP): Experiences and Lessons Learned," *Proceedings of the 84th Annual Meeting and Exhibition of the Air and Waste Management Association*, Vancouver, British Columbia, June 16-21, 1991.
- Maher, E.F., McCartney, K.A., Mize, B.D., Sun, L.S. and Siebert, S. R., "Development of Rapid Methods for Assessing Doses from Internally Deposited Radionuclides," 52<sup>nd</sup> Annual Meeting of the Health Physics Society, Portland, OR, July 2007.