Alan C. Hale, M.S.

SENIOR CONSULTANT

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Mr. Alan Hale is a certified health physicist in ToxStrategies' Exposure Sciences practice. He has 20 years of experience in the fields of radiation health and bioenvironmental engineering, gained throughout a distinguished service career in the U.S. Air Force.

Mr. Hale began his career as a Health Physicist at Kirtland Air Force Base, New Mexico, where he provided support and oversight for radioactive material safe handling. As a Bioenvironmental Engineer at MacDill AFB, Florida, he served as the Radiation Safety Officer for two radioactive material permits. Moving into his second decade of service, Mr. Hale provided worldwide consultation services as Chief, Radiation Health Consulting Branch, for the USAF School of Aerospace Medicine. His next station was at Aviano Air Base in Italy. There, as a Bioenvironmental Engineer Flight Commander, he led a 17-person team supporting the base in matters of industrial hygiene, environmental compliance, and radiation support.

Mr. Hale's final four years of service were with the Air Force Medical Readiness Agency, in Falls Church, Virginia. As the Agency's Medical Service Chief, Radiation Health, he led radiation health policy development, provided radiation safety guidance for the Air Force, and managed radioactive material permitting actions for the Air Force's sole Nuclear Regulatory Commission–issued Master Material License.

As a consultant, Mr. Hale provides professional support to clients on matters of radiological health protection, industrial hygiene, and environmental hazard assessment and prevention.

EDUCATION

2009	M.S., Radiological Sciences and Protection University of Massachusetts—Lowell
2001	B.S., Physics Benedictine University, Lisle, IL
1996–1999	Undergraduate Studies University of Wisconsin—Milwaukee Milwaukee School of Engineering, Milwaukee, WI

CERTIFICATION

Certified Health Physicist (Emeritus), American Board of Health Physics

PROFESSIONAL ASSOCIATIONS

Emeritus Member, American Academy of Health Physics

SELECTED PROFESSIONAL EXPERIENCE

Radiation Health Program Management

Guided U.S. Air Force enterprise-wide management of radioactive material and radiation-producing devices by providing policy and oversight framework to ensure compliance with federal law, including the Nuclear Regulatory Commission and the Occupational Health and Safety Administration.

Managed comprehensive local radiation protection programs. Responsible for inventory, worker training, audits, personnel dosimetry, and worker and public safety.

Reviewed and approved corrective action plans from senior management resulting from inspection findings. Ensured compliance of field operating locations with both internal policies and federal regulations.

Received and reviewed radioactive material incidents notifications. Directly reported incidents to the Nuclear Regulatory Commission when appliable. Directed follow up actions to mitigate hazards and avoid future mishaps.

Coordinated actions leading to decommissioning of radiation facilities. This work included transfer of radioactive material, decommissioning plan review, and regulatory stakeholder approvals.

Environmental Health Physics

Served as a consultant for the review of radiation cleanup activities, including radium and depleted uranium, ensuring compliance with cleanup standards and following Multi-Agency Survey and Site Investigation Manual (MARSSIM).

Conducted both scoping field surveys of potentially contaminated sites and verification surveys of remediated areas. Performed GPS logged gamma walkover surveys in support of remediation work. Collected field soil samples and static direct field readings. Analyzed data and wrote reports to support follow-up actions or closure of sites.

Operational and Applied Health Physics

Designed and implemented radon monitoring plan for more than 100 facilities at one location. Conducted health risk assessment and provided risk communication to facility managers on findings. Advised on facility modifications to mitigate risk in multiple facilities.

Led survey operations of the Air Force Radiation Assessment Team (AFRAT). Conducted training missions to support emergency response. Trained in emergency health risk communication, emergency dose limits, field survey, and dosimetry techniques.

Senior Health Physicist on 36-member AFRAT response to Fukushima Daiichi nuclear disaster. Spent 60 days in Japan immediately after incident to conduct training, education, and health risk assessment for US military members in Japan. Oversaw field survey team's work of collecting and processing samples/surveys. Directly supported US military locations and military members who provided humanitarian assistance to the government of Japan.

Directed and reviewed radiofrequency (RF) and laser safety surveys and risk assessments at diverse locations and work centers. Conducted dose reconstruction via calculation and/or measurement for suspected RF overexposures.

Conducted x-ray machine (industrial and medical) surveys, audits, and risk assessments. Ensured that engineering and administrative controls were established and adequate to protect workers and the public from radiation exposures.

Coordinated with medical care providers on details of duties and radiological dose estimates for pregnant radiation workers.

Consulted on consequences of changing airflight paths. Provided dose assessments and recommendations for polar routes to include pregnant aircrew.

Reviewed quarterly and annual radiation dose reports. Identified trends and investigated abnormal or suspected overexposures.

Consulted on radiation shielding design for industrial, medical, and dental facilities. Determined radiation barrier requirements to control doses for workers and in adjacent public areas.

Developed radiation survey plans to support decommissioning activities and material/equipment clearance. Determined survey methods, sampling points, and instrumentation requirements.

Conducted Department of Transportation-–required surveys on radioactive material packages to support shipment and receipt of radioactive materials. Consulted on proper packing and labeling based on measurements.

PUBLISHED WORK

Rish W, Racz L, **Hale A**. 2026. Public radiation dose from conventional gas-well produced water used as a pavement deicer. J Waste Manag Assoc 76(1):13-27; doi: 10.1080/10962247.2025.2565287.

Racz L, **Hale A**. 2025. An integrated approach to planning for and responding to ionizing radiation incidents. Chapter 13 in: Racz L and Badiru AB (eds), Handbook of Emergency Response: A Human Factors and Systems Engineering Approach, 2nd Edition. Taylor and Francis Group—CRC Press: Boca Raton, FL. pp. 240-256; doi: 10.1201/9781003648178.

Hale AC, Tries MA. 2011. Determination of ^{239}Pu airborne concentration alpha correction factor for a zinc sulfide detector via ambient ^{222}Rn progeny air sampling. Health Phys 100(2):201–209; doi: 10.1097/HP.0b013e3181e928a7.

ABSTRACTS AND PRESENTATIONS

Bhat RK, **Hale AC**, Nemmers SA, Gulley TL, McComb BA, Murren BA, Cessor-Culver DJ. The management and control of radioactive material in the US Air Force. United States Air Force, Health Physics Society, 52nd Midyear Meeting, February 2019.

Hale AC, Rademacher SE. Developing a unified radon policy for the US Air Force. United States Air Force, Health Physics Society, 64th Annual Meeting, July 2019.

Hale A. False neutron response resulting from cross talk of a neutron/gamma scintillator radioisotope identifier. United States School of Aerospace Medicine, Health Physics Society, 58th Annual Meeting, July 2013.

Hale AC. The Air Force's decommissioning of nuclear medicine facilities. United States School of Aerospace Medicine, Health Physics Society, 58th Annual Meeting, July 2013.

Stowe J, **Hale A**. Department of Defense's response to Fukushima. United States Air Force, National Radiological Emergency Preparedness, 2nd Annual Conference, April 2012.