



American Academy of Health Physics
American Board of Health Physics
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Corner

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Recently Charles Roessler, your AAHP President, was invited to write a guest column for the Academy of Industrial Hygiene newsletter regarding ties between the health physics and industrial hygiene professions. His column appeared in the June 2000 issue of The AIH Diplomate which appeared as an Insert in the June/July 2000 issue of the American Industrial Hygiene Association publication, The Synergist. Since many Academy members are not members of the AIHA and may not have seen Chuck's column, it is reprinted here in its entirety.

Ties Between Health Physics and Industrial Hygiene

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First of all, I thank Editor Ettinger for the invitation to submit this column. This assignment has been a stimulus for formalizing some recent reflections on the ties between health physics and industrial hygiene in the 21st century.

Health physics deals with radiation safety in various settings—including exposure in the workplace, exposure of the general public to radiation in the general environment and exposure of the patient in diagnostic or therapeutic procedures. A professional society, the Health Physics Society (HPS) was founded in 1956. Shortly thereafter, the HPS began efforts to establish competency standards and examine and certify health physicists meeting these standards. An independent entity to accomplish these objectives, the American Board of Health Physics, was incorporated in 1960. As a further evolution in the 1990s, the American Academy of Health Physics was formed to provide an organization for Certified Health Physicists, encourage the highest standards of ethics and integrity in health physics practice,

give CHPs a voice in the selection of ABHP and support the activities of ABHP. In 1994, the corporate structures of ABHP and the AAHP were consolidated, with ABHP becoming a body within the AAHP.

A Strong Connection

The fields of health physics and industrial hygiene have long been intertwined. Since industrial hygiene and occupational health deal with the broad spectrum of potentially hazardous agents in the workplace and health physics deals with radiation in various settings, exposure to radiation in the workplace represents the intersection of the two. A review of HPS history indicates the evolution of a professional society and a certification program could have gone in any of several directions. At a 1955 health physics conference, Karl Z. Morgan noted that more health physicists belonged to AIHA than to any other functional organization. He presented a number of options for forming a health physics organization, including: a) a section within AIHA, b) several models of a separate society affiliated with AIHA, c) several models of a separate society affiliated with other existing societies and d) several models of an independent society¹. Later the attendees at that conference voted to form an independent professional society². The new society continued ties with industrial hygiene; early HPS Board of Directors rosters included such industrial hygiene personalities as Edgar G. Barnes, Harry F. Schulte, and Merrill Eisenbud.

The two fields have also been intertwined in my personal experience. My health physics fellowship curriculum at the University of Rochester in 1955-56 included an industrial hygiene and toxicology course. My subsequent job was in a group having responsibility for both radiation protection and the broader aspects of industrial hygiene, and this prompted me to strengthen my industrial hygiene knowledge. Then my industrial hygiene fellowship program at the University of Pittsburgh from 1958-59 included a health physics course. My next job was as a radiological physicist (health physicist) with the Division of Industrial Hygiene (later renamed Division of Radiological and Occupational Health) of the Florida State Board of Health. While my interests led me to concentrate in the radiation area and seek certification in health physics, I have maintained my membership in AIHA and ACGIH as well as HPS.

The field of health physics owes much to industrial hygiene for providing scientific theory, sampling and measurement techniques and methods for hazardous (radioactive) material control. For example, aerosols have the same behavior whether or not they are radioactive, and the techniques developed for controlling, sampling, characterizing and modeling behavior of aerosols in general are equally applicable to radioactive materials. Reciprocally,

the field of industrial hygiene has benefitted greatly from the funding provided for nuclear and radiation research and development.

Administratively, the health physics and the industrial hygiene units are often in the same medical or environmental health and safety group where they can provide mutual support. Through cross-training, limited resources can be more effective in this time of budget tightening and downsizing. In addition, individuals who become cross-trained increase their understanding of their departments' overall challenges, and they significantly improve their own chances for upward mobility.

Similar Challenges

The coexistence of potential radiation/radioactivity and non-radiological problems in the same facility is a strong reason for close alliance between the fields. For example, beryllium, still of concern decades after being recognized as a hazardous material, has been widely used in nuclear operations. In another example, decommissioning and remediation of nuclear facilities and sites may involve a wide variety of hazardous materials in addition to radioactivity.

Another contemporary challenge is the management of so-called "mixed waste" (waste with both radioactive and other hazardous constituents). The radiation and chemical risk management approaches, born out of different traditions, differ sharply, and the wastes and their management are regulated by two different agencies. The solution to mixed waste management involves treating either the chemical or radiological component while providing protection from the untreated component, and then directing the residual to the appropriate waste stream. Along similar lines, a current topic of discussion is the "harmonizing" of standards and management for chemicals and radiation. The need for the cooperation of radiation safety and chemical safety disciplines in these examples is obvious.

Recently the question was raised as to whether certification by the ABHP should constitute evidence of sufficient qualifications for admission to the ABIH exam³. By extension the reciprocal question could also be raised. The answer given to this question was: No, while both boards similarly require strong science backgrounds, the requirements are stated differently. Neither board would presume to dictate to the other. On the other hand, this does not preclude future efforts to achieve some form of reciprocity.

There is currently visible cross-interest between the two fields. ABIH is developing an associate industrial hygiene certification for professionals who primarily function in a single industrial hygiene rubric area (such as health

physics) and thus do not qualify for comprehensive practice certification. HPS is exerting efforts to enhance liaison between the health physics and industrial hygiene communities⁴, and AAHP and HPS offered continuing education and professional enrichment courses on industrial hygiene topics at the June 2000 American Radiation Safety Conference and Exposition. Some may see this as two-way "invasion of turf." I prefer to view this as a recognition of the interrelationships of the two fields.

The Future

My vision for the 21st century is one of mutual respect and cost-effective utilization of talent. Health physicists would be expected to recognize nonradiological hazards as they come upon them, solve the simpler problems and know when to call in the industrial hygiene expert. Similarly, industrial hygienists would recognize radiological hazards, be able to deal with basic radiation protection problems and know when to call in the radiation expert. This vision has health physicists and industrial hygienists both contributing to the harmonization of the approaches to radiation and chemical risks. Another part of the vision would have the various safety-area certifying bodies addressing reciprocity questions, working through vehicles such as the Council of Engineering and Scientific Specialty Boards and the Intersociety Credentialing Task Force.

References

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3. Health Physics Society Website. "Ask the Expert," Question #167; www.hps.org.
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