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Summary of the AAHP Special Session on Radiological Accidents and Incidents: Lessons Learned?

Ed Maher, CHP, Past President, AAHP

The topic of this year’s American Academy of Health Physics (AAHP) Special Session at the 53rd Annual Meeting of the Health Physics Society (HPS) in Pittsburgh, Pennsylvania, was chosen to provide a forum for discussing the lessons learned from several noteworthy radiological accidents and incidents in a variety of health physics areas of practice. The special session brought together experts in areas of health/medical physics, behavioral psychology, and emergency management who represented the military, health care, state regulators, nuclear power, research, and universities to discuss the “lessons learned” in the wake of serious radiological accidents and incidents. The afternoon session ended with a roundtable discussion, allowing attendees to share their own experiences and ask questions of the speakers.

The morning session began with LTC Steven Rademacher (USAF retired) and CMD Ken Groves (USN retired) presenting a very interesting and little-known history of the lessons learned from 32 nuclear weapon accidents and incidents within the United States and overseas during the period of 1950 to 1980. The speakers emphasized that these accidents and mishaps closely tracked the movement of nuclear weapons in response to a number of Cold War events and belligerent acts. The number of accidents over this period was greater during the early years than later years, owing to inherent vulnerabilities in early nuclear weapon designs and, later, lesser reliance on airborne nuclear deterrence. The major lessons learned included (1) better radiological detection (FIDLER and VIOLINISTS instrumentation) greatly improved survey efficiencies for alpha emitters, (2) weapons accidents that released ²³⁹Pu had the greatest impacts, (3) technical capabilities of the Department

of Energy (DOE) and Department of Defense became more sophisticated and robust as the complexity of the accident responses increased, and (4) restoration activities at nuclear weapon accident sites present challenging technical and public risk communication issues.

John Bliss of Los Alamos National Laboratory followed and discussed the lessons learned and impacts of a 2005 shipping contamination incident and several events in 2007 that involved wounds incurred using a glovebox. Human performance and behavioral factors relevant to these events and the local responses were discussed and analyzed to identify common lessons learned that are applicable to similar challenges around the DOE complex.

The morning session concluded with a presentation by Bill Walker of Oncology Medical, Inc., who provided a very poignant recounting of a patient fatal accident involving a high dose rate (HDR) treatment at a midwest cancer center in 1992. The discussion described the accidental doses received by nursing home, clinic, and nursing staffs, visitors, and waste disposal vendor employees that could have been easily avoided had the medical physicist investigated the error message on the HDR console and used a handheld radiation detector to determine the actual location of the HDR source(s).

The afternoon session was led off by Bill Dornsife of Waste Management Services, who described the state, utility, Nuclear Regulatory Commission, and local responses during the infamous and highly publicized Three-Mile Island (TMI) nuclear power plant accident. Dornsife was the Commonwealth of Pennsylvania’s radiation control program director during the TMI accident and he brought a unique

state perspective on the lessons learned on the nation's most serious nuclear power plant accident. Dornsife concluded his remarks with a listing of "Maggie's Rules," which summarized in a very humorous light the many important lessons learned following this landmark accident.

Steven Becker, a professor at the University of Alabama at Birmingham, was the next speaker and he described the psychosocial and communication lessons learned from a number of recent worldwide radiological accidents. Becker remarked that these behavioral effects impact far more persons than those exposed and present major challenges for emergency responders and service delivery that complicate recovery and generate ripple effects throughout the broader society. The speaker examined recent research and real-world experience with psychosocial issues in radiological/nuclear incidents that have become key issues for planning, preparedness, and response personnel.

The afternoon session concluded with a presentation by Julie Hanlon of the Harvard University radiation safety office. Hanlon discussed the lessons learned from a ³²P internal contamination event at the Massachusetts Institute of Technology that occurred in 1995. The event (which later was determined to be a deliberate and malevolent act) had profound and lasting effects on the use of radioactive materials at academic research institutions. The response and reaction afterwards impacted academic radiation safety programs and its relations with institutional management, as well as the user community.

The AAHP's special session is the primary responsibility of the Academy's immediate past president. I chose the topic because I felt it was vitally important to revisit these lessons learned over the past almost 60 years to make sure they are faithfully passed down to future generations of radiation safety and emergency preparedness managers.

I would like to acknowledge and thank LTC Steven Rademacher, who did an outstanding job as session cochair. The session was very well attended, indicating the intense level of interest and concern about the lessons learned from past radiological accidents. I would especially like to express my gratitude to all our speakers, some of whom made a significant effort to be able to attend and address the lessons learned from radiological accidents and incidents.

I would like to end this summary report with two of my favorite quotes applicable to "lessons learned." The quotes come from the Spanish-born philosopher and humanist, George Santayana: *"Those who do not learn from history are doomed to repeat it"* and *"Wisdom comes by disillusionment."* Enough said.



The State of AAHP Finances

Edgar D. Bailey, CHP, Treasurer

Academy's Investments

Anyone who has investments in the stock and bond markets, reads the newspaper, or watches television news knows only too well that these markets have taken a real beating in the past few months. Luckily for the Academy, its intermediate—and long-term—investments have not fared as poorly. Although in the past year the Academy has not experienced the large growth it has in the past, it did experience a very modest increase in value. The total value of the Academy's investments as of 31 May 2008 (the last full quarter of data available) rose to \$669,647. This is a 0.20 percent increase over the same date last year. This increase exceeded the benchmark goals of the S&P 500 and the LBGC. As of 31 May 2008, the Academy's short-term funds on hand totaled \$159,025.

The Academy's investment policy says that the Academy should have securities (including short-term funds) equivalent to 2.5 times its annual budget. An analysis of these funds shows that this goal is being met.

FY2008/2009 Budget

At its 12-13 July 2008 meeting in Pittsburgh, Pennsylvania, the Executive Committee adopted the FY2008/2009 operating budget. This budget has \$232,225 for expenses of the Academy and the American Board of Health Physics (ABHP). Included in this budget are monies to fund:

- The continuation of the redesign of the Academy's Web site.
- The continuation of the investigation and evaluation of ISO certification for the ABHP certification process for health physicists.
- A one-time bonus for Burk and Associates, Inc., in recognition of the outstanding support it continues to provide to the Academy and the ABHP.

The approved budget projects \$175,700 in income in FY2008/2009, but this does not mean the Academy will experience an operating deficit. The projected income includes no revenue from the growth of assets. Also, the Finance Committee and Executive Committee have noted that historically the officers and committees of the Academy and the ABHP consistently spend less than is budgeted for them. It is the Finance Committee's belief that there will be no real deficit and that the value of the Academy's assets will continue to grow in FY2008/2009.

The complete budget is posted on the Members Only section of the Academy's Web site. Should you have questions, don't hesitate to email me at edbaileychp@msn.com.

