



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE
Advancing the Science, Education & Professional Practice of Medical Physics

A photograph of a medical physicist's workstation. Three computer monitors display X-ray images of a human torso. In the foreground, a person's hands are visible, wearing a watch and a ring, as they operate a computer mouse. A keyboard is also visible on the desk.

AAPM'S SOURCE SECURITY ADVOCACY

1631 Prince Street, Alexandria, VA 22314 | 571-298-1300 | www.aapm.org



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

Advancing the Science, Education & Professional Practice of Medical Physics

RICHARD J MARTIN, JD

Government Relations Specialist

richard@aapm.org



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

Advancing the Science, Education & Professional Practice of Medical Physics

DISCLOSURES

AAPM Employee
No Conflicts



OBJECTIVES

Context: Post-September 11, 2001, concern for safety and security of radioactive materials

Threat: Draft bills introduced in Congress to mandate
use of alternative technologies/prohibit use of Category 1 and 2 sources

Challenge: Educating legislators and others on safe and secure use of radioactive materials and
benefits of sources in cancer treatment and quality patient care

AAPM's Advocacy: Aligning with other stakeholders to maximize impact/Focused outreach

Behind every
advocacy campaign
is a story...





POST-SEPTEMBER 11, 2001 ENVIRONMENT

- Concerns mount about radiological dispersal device/dirty bomb/radiological exposure device
- Reports of terrorists attempting to acquire sources give urgency to efforts to secure and reduce
- Push for development of non-radioactive alternatives



POST-9-11 IMPACT

U.S. implemented increased physical security program that included existing regulations for safe use with enhanced security



NRC 10 CFR PART 37

- Pre-Licensing Activities including screening/site visits
- Background checks/personnel access
- Documented security programs to address unauthorized access
- License Verification System (LVS)
- National Source Tracking System



CATEGORIES FOR RADIOACTIVE SOURCES (IAEA CODE OF CONDUCT)

- Category 1 sources would likely cause permanent injury to person who had contact for more than a few minutes. Probably fatal to be close to this amount of unshielded material for a period of few minutes to an hour.
- Category 2 sources could cause permanent injury to person who handled had contact for short time (minutes to hours). Possibly fatal to be close to this amount of unshielded radioactive material for period of hours to days.
- Category 3 sources could cause permanent injury to person who had contact with them for some hours. Possibly fatal, but unlikely, to be close to this amount of unshielded radioactive material for period of days to weeks.
- Irradiators, Radiation Teletherapy, High Dose Rate Brachytherapy



ADEQUACY OF CONTROLS REPEATEDLY QUESTIONED

- *NRC Has Enhanced the Controls of Dangerous Radioactive Materials, but Vulnerabilities Remain, Government Accountability Office (GAO) Report July 2016*
- NRC now assessing Category 3 source security and accountability



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE
Advancing the Science, Education & Professional Practice of Medical Physics

INTERAGENCY WORKING GROUP ON ALTERNATIVES TO HIGH-ACTIVITY RADIOACTIVE SOURCES (GARS)

Chartered on June 8, 2015

National Science and Technology Council

Committee on Homeland and National Security

Subcommittee on Nuclear Defense Research and Development



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

Advancing the Science, Education & Professional Practice of Medical Physics

MEMBER DEPARTMENTS AND AGENCIES

Agriculture; National Institute of Standards and Technology; Defense; Energy; National Nuclear Security Administration; Centers for Disease Control and Prevention; Centers for Medicare and Medicaid Services; Food and Drug Administration; National Institutes of Health; Homeland Security; State; Veterans Affairs; Environmental Protection Agency; Nuclear Regulatory Commission; Office of Science and Technology Policy



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE
Advancing the Science, Education & Professional Practice of Medical Physics

TRANSITIONING FROM HIGH-ACTIVITY RADIOACTIVE SOURCES TO NON-RADIOISOTOPE (ALTERNATIVE) TECHNOLOGIES (DEC 2016)

Background information and recommendations to Federal agencies on best practices for transition from high-activity radioactive sources to non-radionuclide technologies where they meet technical, operational, and cost requirements for end users



GARS METHODOLOGY

- Assessed state of research and development on non-radionuclide technologies
- Compared costs and capabilities with those of radioactive sources used in comparable applications
- Reviewed practices policies and regulations that affect use of high-activity radioactive sources and alternatives
- Explored ways to support long-term transition to non-radionuclide technologies



GARS RECOMMENDATIONS

- Agencies should promote adoption of alternative technologies
- Balance operational and technical needs of users/device stakeholders with national security
- Medical applications of Category 1 and 2 radioactive sealed sources are likely to continue for considerable time if alternatives are not suitable for purpose



Radiation Therapy

- Stereotactic radiosurgery (Co-60)

Irradiators

- Blood/ Sterilization/Research Applications (Cs-137, Co-60)



SOURCE SECURITY WORKING GROUP (SSWG)

- Alliance of industry sectors including energy, health care, oil and gas, and industrial radiography
- Supports risk-informed, science-based policy that balances benefits of radioisotopes with safe secure usage
- AAPM on Steering Committee



THE THREAT: DIRTY BOMB LEGISLATION

- Limit use of radionuclide sources
- Mandate use of non-radionuclide alternatives
- Restructure agency authority over source security and protection



NATIONAL DEFENSE AUTHORIZATION ACT (NDAA)

Sen. Carper (D-DE) filed as amendment S 2943 to National Defense Authorization Act (NDAA) for FY 2017 to authorize appropriations for fiscal year 2017 for military activities of DOD, military construction, and defense activities of DOE



DIRTY BOMB LEGISLATION

- SSWG/AAPM worked with Sen. Carper's office on edits
- Included: giving licensees 48 hours to respond to unauthorized access issues before suspension.
- Concerns remain: language that would supercede current framework provided in Energy Policy ACT of 2005 to coordinate policies on radiological source security through Radiation Source Security Protection and Security Task Force



STATUS OF LEGISLATION

Amendment filed last year but did not progress
It would need to be reintroduced in 2017 for consideration
It has not been reintroduced yet

AAPM's Outreach Narrative...





AAPM SOURCE SECURITY CONGRESSIONAL OUTREACH PLAN

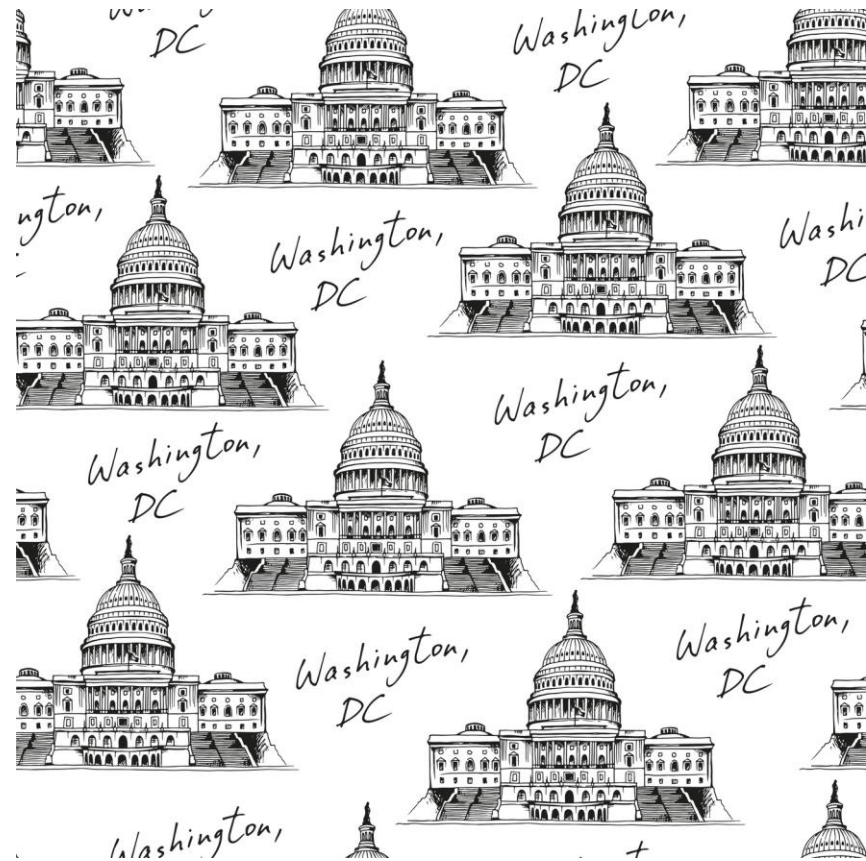
- Meetings with Congressional offices to discuss legislative efforts to “secure” Category 1 and 2 source materials
- Goal to establish AAPM as a resource while gathering information on possibility of new source security legislation this Congress



TALKING POINTS

- Introduce work of medical physicists/radiation safety officer
- Is Committee working on source security legislation? Aware of other legislative efforts?
- Is there opportunity for AAPM to be resource/part of process?
- Brief explanation of opposition to recent legislative efforts

AAPM's Washington, DC, Advocacy Activities...





House

- Appropriations
- Armed Services
- Energy and Commerce
- Homeland Security
- Science and Technology
- Rep. Kaptur's Office
- Rep. Simpson's Office

Senate

- Armed Services
- Appropriations
- Energy
- Environment and Public Works
- Homeland Security
- Intelligence
- Min. Leader Schumer's Office



SSWG LETTER TO PRESIDENT-ELECT TRUMP AND TRANSITION TEAM

Maintain NRC as sole regulator for domestic civilian use of radioisotopes

Do not require artificial transitions to alternative technologies

Support DOE's mission to provide a reliable domestic supply of key radioisotopes



NRC REQUEST FOR COMMENTS ON CATEGORY 3 SECURITY AND ACCOUNTABILITY (MARCH 2017)

- AAPM Comment Letter
- SSWG Sign-On Comment Letter



PATH FORWARD

NDAAs continue to be the biggest threat
Monitor closely and defend, if necessary
Work with House Homeland Security proactively



AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

Advancing the Science, Education & Professional Practice of Medical Physics

THANK YOU

Richard J Martin, JD

Government Relations Specialist

richard@aapm.org