

American Medical Isotopes Production Act of 2011 (S. 99)

Witnesses

Dr. Parrish Staples

Director, Office of European and African Threat Reduction, Global Threat Reduction, Defense Nuclear Nonproliferation, National Nuclear Security Administration, U.S. Department of Energy

Mr. Roy W. Brown

Federal Affairs Senior Director, The Council on Radionuclides and Radiopharmaceuticals (CORAR)

Margaret Doane

Director of Office of International Programs, U.S. Nuclear Regulatory Commission

Committee Members Present

Jeff Bingaman, Chairman (D-NM)

Lisa Murkowski, Ranking Member (R-AK)

Joe Manchin (D-WV)

Al Franken (D-MN)

Richard Burr (R-NC)

The Senate Committee on Energy and Natural Resources held a hearing on February 1, 2011 on S.99, the American Medical Isotopes Production Act of 2011. The legislation is intended to encourage domestic production of molybdenum-99 (Mo-99) without using highly enriched uranium (HEU). Mo-99 is the parent isotope of technetium-99, which is used to detect cancer, heart disease and thyroid disease and to study brain and kidney function and image stress fractures.

Chairman Jeff Bingaman (D-NM) and Ranking Member Lisa Murkowski (R-AK) mentioned the importance of the legislation in regards to securing a reliable supply of Mo-99 to avoid shortages in the future. The United States has not had a domestic supply since 1989, according to Murkowski, and is currently reliant on supplies from Canada and Europe. The “stability and viability of a long term supply is in question,” she said. Bingaman applauded the act for its proposal to phase out the export and use of HEU for medical isotope production and use low enriched uranium (LEU) instead.

Processes based on HEU pose a threat to national security because they use nuclear material enriched to the same degree as that used in nuclear weapons and devices. That material could possibly be acquired by terrorists or rogue states, said Dr. Staples of the National Nuclear Security Administration (NNSA). The NNSA and the Department of Energy (DOE) have been working with national laboratories and industry to develop technologies that omit the need for HEU, he said, and South Africa has already begun LEU-based Mo-99 production. Staples noted that NNSA supports the development of multiple ways to produce Mo-99, therefore avoiding reliance on a sole technology. NNSA works with commercial entities and offers technical support of U.S. national labs.

Brown went over issues that the Council on Radionuclides and Radiopharmaceuticals (CORAR), a group comprised of companies from the radionuclide industry, wants the committee to consider. A provision of the act states that the DOE is required to accept waste created by the production of medical isotope from DOE-leased uranium. CORAR wants an assurance that the cost of such acceptance is reasonable and comparable to prices paid for commercial disposal if it were available, said Brown.

Murkowski asked what happens to the waste product from producing Mo-99 currently. It is stored onsite at the producing facility, said Staples. Staples stated that more waste is generated from LEU processes compared to HEU.

Murkowski asked the witnesses for comment on the NNSA's attempt to remain ‘technology neutral’ in their support of LEU production. The key to achieving neutrality is to develop multiple technologies and avoid problems due to dependence on one type, Staples responded. Brown said that while CORAR supports the way DOE has given grants so far, it wants to avoid supporting too many areas of technology and losing focus.

Senator Burr asked if Doane, the technical expert from the Nuclear Regulatory Commission (NRC), could suggest a timeframe for

NRC licensing of new reactors that are not currently specified under the Atomic Energy Act (AEA). One of CORAR's requests is that the act revises the AEA or directs the NRC to permit licensing of new types of reactors. Because the NRC has not received any applications, it cannot estimate a timeframe, said Doane, though it has begun work on pre-licensing processes. The NRC does not expect new legislation to be necessary for licensing of new reactors, and setting up guidelines may be all that is needed, she explained.

Testimony from the chair, ranking member and panelists can be found on the Senate Committee on Energy and Natural Resources [web page](#), as well as a [video archive](#) of the entire hearing.
