July 20, 2010

The Honorable Kit Bond
274 Russell Senate Office Building
Washington, DC 20510

Dear Senator Bond,

We are individuals and organizations concerned with ensuring the supply of medical isotopes and reducing commerce in highly enriched uranium (HEU). For the reasons detailed below, we urge you to lift your "hold" on H.R. 3276, the American Medical Isotope Production Act, to permit a vote by the U.S. Senate.

As you know, the House of Representatives approved this bill by an overwhelming 400 - 17 vote on 5 November 2009, and the Senate Energy and Natural Resources Committee reported it favorably with amendments on 28 January 2010. The legislation in two ways would foster domestic production of Molybdenum-99 (Mo-99) for medical isotopes without HEU. First, it would subsidize construction of production facilities by authorizing government cost-sharing. Second, it would facilitate operation of new facilities by authorizing the government "to retain responsibility for the final disposition of radioactive waste" under uranium-lease agreements – without which operators would have nowhere to dispose of this waste.

If these provisions were enacted, the U.S. Department of Energy predicts that within seven years domestic facilities without HEU would have the capacity to produce up to twice or more of the U.S. demand for such medical isotopes. The United States no longer would have any need to import medical isotopes produced in foreign countries with HEU. Accordingly, the legislation also phases out U.S. exports of HEU for foreign production of medical isotopes within 7 to 13 years. This would strongly encourage foreign producers to convert their manufacturing processes to eliminate the use of HEU, which is feasible within that time period, according to a recent report to Congress by the National Academy of Sciences.

HEU is a nuclear weapons material. Accordingly, the recent Washington Nuclear Security Summit of 47 countries issued a communiqué on 13 April 2010, calling for "minimization of use of highly enriched uranium, where technically and economically feasible."

You have expressed concern that the legislation could terminate exports of HEU, and thus inhibit foreign production of medical isotopes, prior to establishment of sufficient domestic production capacity. In your words, "I do not want to risk the health of millions of U.S. patients with a medicine cutoff such as that proposed by H.R. 3276 before we have tangible evidence that we can meet their treatment needs."

By preventing Senate consideration of H.R. 3276, however, you are blocking incentives for domestic production of medical isotopes and thereby actually increasing

the likelihood of a domestic shortage of medical isotopes. Absent the legislation, the Energy Department is not authorized to facilitate operation of domestic producers – such as the University of Missouri – by assuming responsibility for their resulting radioactive waste. Although the Energy Department did provide some cost-sharing last year through an annual appropriation, without the multi-year authorization provided by H.R. 3276, uncertainty about future cost-sharing will inhibit investment in domestic production facilities.

In recent years, the unexpected shutdown of several foreign production plants has interrupted U.S. supplies of medical isotopes. Because your hold on the legislation inhibits domestic production of medical isotopes to address such shortfalls of imported isotopes, it puts at risk medical procedures for millions of U.S. patients – precisely opposite to your stated intent. Moreover, blocking the legislation's phase-out of HEU exports also reduces the incentive for foreign manufacturers to stop using this bomb-grade material, and thereby perpetuates unnecessary security risks.

U.S. officials and experts have testified repeatedly that new domestic production of medical isotopes without HEU, under the legislation, would be sufficient to satisfy U.S. demand prior to the proposed phase-out of HEU exports. On 3 December 2009, Kevin Crowley, director of the National Research Council's January 2009 study entitled "Medical Isotope Production without Highly Enriched Uranium," testified to the Senate Energy and Natural Resources Committee that "the legislation's proposed phase-out period of 7 years, with an additional 4 years if needed, is largely consistent with our report's suggested phase-out period of 7-10 years." (In the version of the bill subsequently reported to the full Senate, the committee extended the phase-out period to 13 years, providing even greater assurance that there would be sufficient domestic production of medical isotopes prior to the cutoff of HEU exports.)

At an earlier hearing of the House Energy and Environment Subcommittee on 9 September 2009, the U.S. official who oversees medical isotope production at the Energy Department's National Nuclear Security Administration (NNSA), Parrish Staples, testified as follows:

> NNSA is working on several Cooperative Agreements to potential commercial Mo-99 producers, whose projects are in the most advanced stages of development, accelerating their efforts to begin producing Mo-99 in quantities adequate to the U.S. medical community's demand by the end of 2013. . . . The American Medical Isotopes Production Act of 2009 is crucial to ensuring the success of these efforts to accelerate development of a domestic supply of Mo-99 with[out] the use of HEU.

At the subsequent Senate hearing, Dr. Staples elucidated: "Currently, we are working or we would intend to work that we would develop four independent technologies, each capable of supplying up to 50 percent of the U.S. demand. Obviously, in theory, that means that if each of these are successful, we could supply the global requirement for this isotope" – roughly twice the U.S. domestic demand. In other words,

under the legislation, the projected U.S. domestic production capacity could satisfy U.S. demand prior to the cutoff of HEU exports, even if only half of the four main projects succeeded.

Additional projects may further boost domestic production capacity under the legislation. In responses submitted for the record of the Senate hearing, Roy Brown, senior director of federal affairs for the Council on Radionuclides and Radiopharmaceuticals, identified ongoing projects at the following facilities including those cited above: 1) B&W/Covidien proposed homogeneous-core reactors; 2) University of Missouri reactor; 3) University of California-Davis McClellan reactor; 4) University of Washington reactor; 5) Sandia National Laboratory proposed fuel-pin reactor; 6) Iotron accelerator production; 7) Puerto Rico proposed reactor; 8) Oak Ridge National Laboratory HFR reactor utilized by a private consortium; and 9) Idaho State University accelerator production. In addition, Brown testified, "We are also aware of several other efforts underway in the U.S., that may not be as far along as these listed." One of those, a GE Hitachi initiative to produce at research or power reactors, is now a leading contender.

Senator Bond, we share your concerns about assuring domestic supplies of medical isotopes. The best way to achieve that goal is to enact H.R. 3276, which also would address nuclear-security risks by reducing HEU commerce. We urge you to lift your hold and permit the Senate to vote on this vital legislation.

Thank you for your consideration.

Sincerely,

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Rep. Edward Markey, Chair, Subcommittee on Energy and Environment
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