



# National Organization of Test Research and Training Reactors

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PRM-50-90  
(73FR30321)

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OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

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Secretary  
U.S. Nuclear Regulatory Commission  
Washington DC 20555-001

Attention: Rulemaking and Adjudications Staff

Re: PRM-50-90: Comments on Natural Resources Defense Council Petition to Ban Future Use of Highly Enriched Uranium

Dear Sir or Madam:

The National Organization of Test, Research, and Training Reactors (TRTR) hereby provides the following comments on the Natural Resources Defense Council's (NRDC) Petition for Rulemaking to Ban Future Civil Use of Highly Enriched Uranium. This petition is docketed as PRM-50-90; NRC-2008-0279.

The above petition is based on an article entitled, "Detecting Nuclear Smuggling" that appeared in the April 2008 issue of Scientific American. The article was authored by Thomas Cochran and Mathew McKinzie, both of whom (together with others) authored the petition. The editors of Scientific American provide a concise summary of each article that appears in the magazine under the heading "Key Concepts." We quote that summary here:

- "Existing radiation portal monitors, as well as new advanced spectroscopic portal machines, cannot reliably detect weapons grade uranium hidden inside shipping containers. They also set off far too many false alarms.
- So-called active detectors might perform better, but they are several years off and are very expensive.
- The U.S. should spend more resources rounding up nuclear smugglers, securing highly enriched uranium that is now scattered overseas, and blending down this material to low-enriched uranium which cannot be fashioned into a bomb."

The petition seeks to amend the existing regulations that govern the domestic licensing and use of highly enriched uranium (HEU).

Template = SECY-067

SECY-02

TRTR is opposed to the petition for reasons that are discussed below. However, before enumerating those issues, TRTR wishes to make clear that it concurs with the editors' summary of the Scientific American article. We recognize that existing detection methods need improvement and that, despite significant expenditure of resources on the round-up of HEU internationally, more needs to be done. Moreover our concern goes beyond mere recognition of this matter. Some of our members have been and are actively engaged in research activities to address these very crucial issues. Such involvement includes the development of advanced imaging modalities and the testing of detection methods for HEU.

The crux of the matter is that there may be HEU or other similar material in areas of the world where regulatory systems are weak or non-existent or where such systems are or have been deliberately violated. This creates the possibility that a sub-national group might obtain such material and then smuggle it into a nation such as the United States where it could be used to fashion a weapon. The key points are that the source(s) of the HEU or related material are not known and that they are outside the United States and/or other allied nations. Any action to correct this situation has to address these two facts. One solution is improved detection at borders. That solution may or may not, for the reasons made clear in the Scientific American article, be practical. Another is to put further resources into tracking down and recovering any stray material.

The petitioners would address the problem by further regulating the use of known stocks of HEU and/or related materials in the United States and its trading partners, all of which have sound regulatory and security systems. This petition therefore does nothing to rectify the major issues which are the possible existence of unknown stocks and their presence in nations where regulatory systems are weak or non-existent.

Specific concerns with the petition include the following:

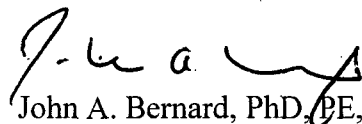
- 1) Some of the requested actions would be superfluous in that the United States is already doing them. For example, the petitioners argue for the conversion of non-power reactors to low enriched uranium (LEU). This activity has long been in progress and is nearing completion. The petitioner notes that LEU can not yet be utilized at several of the larger non-power reactors and urges the NRC to establish a schedule for conversion. Such schedules already exist and regular meetings (the most recent one being the week of 21 July with 35 attendees at MIT) are held to review progress. It is true that a fixed date for conversion of these larger non-power facilities can not be specified with certainty at this time because a suitable LEU fuel is still undergoing scientific trials. However, the point is that the situation is being closely monitored by NRC, DOE, and others.
- 2) Some of the proposed actions would be injurious to the public and counterproductive to the goal of reducing the global threat. For example, the petitioners seek to end the export of HEU for the production of medical isotopes, primarily Tc-99m which is obtained from fission-product Mo-99. There are approximately 35,000 nuclear medicine procedures performed daily in the United States. Of these, about 80% use Tc-99m, mostly for evaluation of cardiac stress. The loss or disruption of this isotope's supply would mean a major decrease in the quality of diagnosis and subsequent care of patients. The United

States currently exports HEU to Canada which produces the Mo-99. Both the United States and Canada have safe, dependable regulatory and security systems that govern the handling of this material. If the petition were granted and this source of Mo-99 were to be lost, then North American hospitals would have to import the material from other international sources, some of which might be less well regulated. This would make diversion of material more likely - exactly the opposite of the effect that is being sought. The present arrangement allows the U.S. government to monitor and control the handling of this material. To change it risks loss of that capability.

- 3) The actions proposed in the petition would create a false sense of security. The Scientific American article has, as we noted at the outset, identified a very real problem - one that this nation and its allies urgently need to address. To do so will not be easy and it will require significant additional resources. The first step to a solution is for us as a nation to recognize that the problem exists. The petition would have us believe that the problem can be solved by simply changing the way the United States regulates its known internal stocks of HEU and related materials. The hope of the petition is that once the U.S. does this, other nations will feel a moral obligation to do likewise. This misses the point entirely. The United States has embraced the transition to LEU and so have many of its allies. However, this does not solve the smuggling challenge because diversion of material from within the United States and/or its allies is not and never was the problem. The problem is what we don't know - what may have been lost from inventory lists during the collapse of the former Soviet Union or what may be made illicitly by a nation not subject to IAEA review. The petition does nothing to address the matter of these unknown stocks that may become accessible to sub-national groups. Rather it would focus our attention on internal materials that are already well regulated and in so doing make us feel safe because we would perceive ourselves as doing something when in fact we would still be ignoring the real external threat.

For the above reasons, TRTR urges the Commission to reject the above referenced petition. However, we also urge the NRC and other government agencies to continue efforts regarding the identification and securing of HEU and related materials that may be outside of established regulatory systems.

Sincerely,

  
John A. Bernard, PhD, PE, CHP  
Chairman, TRTR