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NATURAL RESOURCES DEFENSE COUNCIL

September 8, 2008

Ms. Annette L. Vietti-Cook, Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Attention: Rulemaking and Adjudications Staff

Subject: Docket No. PRM-50-90; NRC-2008-0279
Additional comments by the NRDC

Dear Madam Secretary:

We are writing to provide additional comments regarding the subject rulemaking.

A. Consideration of licensing HEU of intermediate concentrations.

In our initial petition for rulemaking we requested that the Commission consider, as an alternative policy, establishing for a limited number of licensees an intermediate ^{235}U concentration limit of less than 40 percent, to permit continued use of highly enriched uranium (HEU) for a longer period of time. After consultation with staff at the Department of Energy (DOE) we are convinced that this alternative would not be an improvement over establishing a date after which the NRC would no longer authorize the use or export of highly enriched uranium (HEU), with exceptions indicated as a) through d) on page 4 of our March 24, 2008 petition.

Recommendation.

We recommend that NRC exclude the alternative policy option to establish for a limited number of licensees an intermediate ^{235}U concentration limit less than 40 percent.

B. Avoiding the risk of shutting down existing HEU-fueled reactors.

Several comments, e.g., August 1, 2008, comments by John A. Bernard on behalf of the National Organization of Test Research and Training Reactors (TRTR), and August 6, 2008, comments by Edward S. Lau and Thomas Newton on behalf of the MIT Nuclear Reactor Laboratory, raised concerns that establishing a date after which the NRC would not license civil use of HEU could jeopardize the continued operation of reactors currently using HEU fuel, even if there is a good faith effort to convert from HEU to LEU fuel.

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TRTR noted that schedules already exist for the conversion of large non-power reactors, but that fixing a conversion date with certainty is not possible because fuels are still undergoing scientific trials. Qualification of a new fuel is a scientific process the outcome of which is not always predictable.

It is not our intention to propose a policy that might disrupt ongoing research reactor operations where there is a good faith effort to convert to LEU fuel. We agree that the rule should allow for the continued operation of these reactors, should there be an unplanned or unknown technology barrier arising during the development phase that prevents meeting the schedule for conversion.

We believe at least some of those who opposed the NRDC petition altogether have overlooked an important consideration. If the Commission adopted the NRDC proposed rule, the Commission would be announcing that it will not grant any licenses for new civil uses of HEU. Any new civil-HEU uses would require another rulemaking. This is a strong message that would be sent when the rule is promulgated.

If this petition is rejected and the *status quo* maintained, the Commission would not consider whether to formally end civil use of HEU until the last of the current users has converted to LEU, and even then it would require a new rulemaking to establish that no new license applications would be considered under the current 10 CFR 50 and 70 regulations. Rejecting this petition therefore sends a signal to the rest of the world that the United States wishes to preserve indefinitely the option of licensing new civil uses of HEU. This *status quo* option, we submit, is not in the national security interest of the United States.

We believe both concerns can be accommodated by modifying the rule we proposed in our initial petition.

Recommendation.

We recommend that the rule should be written to require each licensee of an existing HEU-fueled reactor to establish and periodically update in consultation with the NRC a schedule for conversion from HEU to LEU fuel, and that the licensee be required to make a good faith effort to meet the schedule. Should the conversion be delayed for technical reasons that are unforeseen or beyond the control of the licensee, the NRC would consider amendments to the conversion plan that could enable continued operation of the reactor beyond the originally estimated date for conversion.

C. Avoiding the risk of disrupting the supply of Tc-99m for medical use.

Another concern raised by commenters relates to whether the rule proposed by NRDC would disrupt the availability of medical isotopes, primarily Tc-99m from Canada. Here also, it is not our intention to propose a policy that might disrupt the availability of the medical isotope Tc-99m. We believe this concern can similarly be accommodated.

Recommendation.

We recommend that the rule should be written to require that the recipient of the HEU exported to Canada should establish and periodically update, in consultation with the NRC, a schedule for conversion from HEU to LEU targets, and that the licensee be required to make a good faith effort to meet the schedule. Should the conversion be delayed for reasons that are unforeseen or beyond the control of the licensee, the NRC would consider the advisability of continuing export licensing of HEU for targets, in light of prevailing supply conditions for medical isotopes and an assessment of the global security environment.

If the Canadian recipient is unwilling to establish such a schedule, exports would continue to be granted until such time as alternative production of Mo-99/Tc-99m is available from domestic sources that produce Mo-99 using LEU targets or fuel.

D. This petition constitutes an incremental step in addressing the HEU threat to the United States.

In comments to the NRC, the TRTR organization argues that the requested actions would be superfluous in that the United States is already doing them. We submit that the actions would not be superfluous. First, we are heartened by the fact that TRTR agrees with the editors' summary of our *Scientific American* article; that more needs to be done to round up HEU internationally; and that "there may be [we would argue "there are"] areas of the world where regulatory systems are weak or non-existent or where such systems are or have been violated." Where we part ways is that TRTR dismisses the primary purpose in establishing the rule—to send a strong signal to other countries regarding the dangers associated with civil use of HEU to encourage them to follow suit and ban the civil use of HEU. TRTR apparently believes that the mere fact that the United States is working on the issue should suffice. Given that it has been 30 years since the Reduced Enrichment for Research and Test Reactors (RERTR) program was initiated and seven years since 9/11; a stronger signal is warranted.

But in the same set of comments to the NRC, TRTR also posits that the actions proposed by the petition "would create a false sense of security" in that "the problem can be solved by simply changing the way the United States regulates its known internal stocks of HEU and related materials." In our work with the ABC News Investigative Unit as discussed in the *Scientific American* article accompanying the petition, we have confronted head-on the current false sense of security concerning the HEU threat. Actions resulting from this petition clearly do not directly address HEU stocks of greatest concern and so would not reasonably be viewed as a solution to the problem. Rather, the actions resulting from this petition would remove the remaining status of HEU as a commercial product for the United States, clarifying the issue and setting an important precedent for other countries.

Recommendation.

We recommend that the NRC approve this petition in order to clearly and visibly end new civil uses of HEU in the United States, and continue with existing licenses for civil use of HEU to monitor and facilitate the transition to LEU-fuel operation at these research reactors and medical isotope production facilities.

Sincerely,

Thomas B. Cochran
Senior Scientist

Sincerely,

Matthew G. McKinzie
Senior Scientist