

## **Welcome Address – RERTR 2002**

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As the U.S. Department of Energy RERTR Program Director, I would like to extend my warm welcome and thanks to all the speakers and participants at this annual conference of the International RERTR Program. Furthermore, I would like to thank our Argentine colleagues and kind hosts for providing such outstanding facilities and such a beautiful venue for the Meeting. Because there are so many speakers eager to make their presentations, I will strive to keep my opening remarks brief and to the point.

Since 1978, the United States has pursued a policy aimed at reducing the threats posed by civil commerce in HEU. In that same year it was recognized that since HEU-fueled research reactors provide essential services to society, new and advanced LEU fuel technology would be required to accomplish our nonproliferation goals while maintaining the flow of products and services provided by these reactors. Later, in the 1990's, the United States amended U.S. law to clarify the civil HEU minimization policy, with regards to exports of civil HEU from the United States, and implemented the Foreign Research Reactor Spent Nuclear Fuel Acceptance (FRR) program to ship certain spent HEU and LEU fuel back to the United States for disposition.

To date, our calculations show that the effect of nearly a quarter century of implementation of the civil HEU minimization policy has resulted in well over three metric tons of avoided commerce in civil HEU. This amount of material is sufficient to make well over 100 nuclear weapons. Moreover, the FRR program has returned over 700 kg of HEU in spent fuel to the United States for secure disposition. My colleague, Maureen Clapper, will address the progress of that effort later in the program. This positive long-term effect of our policies has been achieved both through direct avoidance of the use of HEU through the conversion of research reactors to use LEU fuel, and by the avoidance of new HEU reactor designs and construction.

In the post September 11 world, it is no longer debatable whether it is useful to pursue an HEU minimization policy. Rather, the concern has shifted to how quickly we can proceed toward the goal of reducing the civil use of HEU to the minimum extent possible.

There should be no doubt in anyone's mind that a significant quantity of HEU in the hands of a terrorist group would constitute an unacceptable threat to peace-loving nations. The disaster that might ensue following the theft of such material would be catastrophic, changing the course of human history and fundamentally altering international security relationships. Of course that is a view as a historian might express it, after the fact. The personal loss and tragedy suffered by the victims of such an attack would be immeasurable, and the collective grief suffered could never be adequately captured by historical analysis.

It is with these sober thoughts in mind that we convene the first conference of the International RERTR Program held since September 11, 2001. Furthermore, we convene this meeting amid reports of more

recent and brutal terrorist attacks such as those carried out in Bali, Moscow, and elsewhere. We should all reflect on the importance and high purpose of what our joint efforts aim to accomplish – the immediacy of our mission, the necessity of our technical endeavors.

Research reactors produce products that save lives today and improve the quality of life tomorrow. Life-saving medical isotopes and procedures, agricultural products, scientific and engineering endeavors all rely on the international research reactor community. We must press forward with renewed purpose to continue providing these essential products, but also to work diligently toward the goal of minimizing the civil use of HEU in the process. Although we may encounter practical difficulties when implementing technical plans, we must press forward, keeping in mind the importance of our goals - understanding that our efforts will improve the lives and security of others, and perhaps, even ourselves.

It was in response to similar concerns, that Presidents Bush and Putin signed a Joint Declaration at the May 2002 summit in Moscow directing technical experts to find ways to accelerate elimination of weapons-useable fissile materials that have been declared excess to defense needs. One outcome of the resulting expert's talks was an agreement that the United States and Russia would accelerate our respective RERTR programs to quicken the pace of development of new LEU fuels to replace HEU fuels in both U.S. and Russian-designed research reactors.

As part of these discussions, the United States has agreed to accelerate ongoing efforts to develop LEU fuel that can be used to convert the five largest HEU-fueled U.S. research reactors engaged in civil programs. It is our goal to develop and qualify new fuel technologies within the next decade, and to convert these reactors as soon as possible thereafter. Similarly, the MinAtom sponsored Russian RERTR program has also agreed to accelerate its efforts in cooperation with the United States. The Russian RERTR program will focus on developing fuel that could be used to convert the 19 largest Russian-designed research reactors engaged in civil programs. Ten of these reactors are located in Russia and nine are located outside Russia. To date, the Russian RERTR program has made substantial progress toward this goal and we look forward to accelerating our cooperation in this joint endeavor.

These efforts, taken in combination with the ongoing cooperation between the United States and Russia to implement a broad program to repatriate HEU fuel from foreign held Russian-designed research reactors, promises to make a substantial reduction in HEU inventories held at Russian-supplied research reactors worldwide. The Russian Research Reactor Fuel Return program is the complement to the U.S. FRR program.

This is indeed an exciting time in the RERTR program. This past year, a speculative monolithic LEU fuel concept developed by Argonne National Laboratory surpassed all performance expectations in post irradiation examination. If monolithic fuel is successfully qualified it could raise the maximum uranium density in research reactor fuel as high as 16g-U/cc. At such high densities, nearly every research reactor in the world should be able to convert. Moreover, there has been recent progress and success at the facilities and institutes of our international colleagues. Much of this progress will be reviewed during the course of this conference.

It is through all of our collective technical efforts that a significant and positive difference is currently being made in global security. Without the continuing support and efforts made by the international research reactor community, directed toward the goals of providing exceptional products and services

while cooperating to reduce the civil use of HEU, it would not be possible to move decisively toward our mutually held objectives. However, now is not the time to rest on our laurels. Rather, it is time to appreciate the progress that has been made, to congratulate each other briefly, and then to move forward with renewed resolve to meet the next set of challenges.