

Minimization of HEU in Civilian Nuclear Applications International Conference

Oslo, Nobel Peace Centre, 19 June 2006

Remarks from the Director General

1. I welcome the initiative of the Government of Norway to bring together, for the first time, such a wide spectrum of representatives of concerned governments, nuclear industry, the nuclear research community as well as concerned NGOs and academic institutions to discuss the important issue of minimizing the uses of and commerce in high enriched uranium (HEU). The IAEA has been pleased to co-operate in the preparations for this event and is looking forward to its deliberations. I trust the Oslo Symposium will be an important milestone on the road towards forging international understanding about the benefits of moving away from the use of and commerce in HEU worldwide and the technical feasibility of doing so.

2. The meeting is timely. The topic of HEU minimization is an important part of the increasing attention currently being given to the control of uranium enrichment technology. My own view is that if all enrichment operations were brought under multinational control, it would become far more difficult for any country to divert enriched uranium for use in weapons.

3. However, until this happens, it makes equal sense to protect and work towards minimization of the uses of HEU that exists. Experts say there are about 1850 metric tonnes of HEU in global stockpiles, enough to make tens of thousands of nuclear weapons. It must be noted that the great bulk of this HEU is in military use and there is little definitive knowledge about the precise magnitude, the scope of use, or the level of physical security of these material stockpiles. While on the civilian side the numbers are much smaller and much of it is under IAEA safeguards, we are aware that the level of physical security of this HEU is not always satisfactory.

4. Nuclear research facilities, primarily research reactors, have been vital cornerstones of nuclear science and technology and continue to provide important humanitarian benefits. For instance, the isotopes they produce are vital to medical treatments, industrial productivity, water management and many other humanitarian uses. Research conducted at these facilities greatly enhances our quality of life. However, it is also noteworthy that for

over two decades, more research facilities have been shut down each year than commissioned — and more than half of the research reactors that are currently operating in 57 countries are over 30 years old. It is not surprising, therefore, to see increasing concerns about the safety of ageing materials and equipment, as well as about the growing accumulation of indisposed fresh and spent fuel stockpiles.

5. Nearly 100 civilian facilities around the world operate with weapon-grade HEU — that is, uranium that has been enriched to 90 percent or greater. However, according to many experts, most if not all of these benefits could also be achieved using low enriched uranium (LEU) while continuing to ensure a secure and effective path for nuclear research for peaceful purposes. As far back as the late 1970s, the United States and other countries began efforts to convert nuclear research facilities from using HEU to LEU to reduce the proliferation risk. In recent years, the security and non-proliferation concerns associated with the potential uses of HEU for malicious and terrorist purposes have further highlighted the importance of this work.

6. Some good progress has been made. The United States has intensified its efforts by launching the Global Threat Reduction Initiative (GTRI), and Russia has joined the United States in facilitating the conversion efforts of other States by taking back fresh and spent nuclear fuel of Russian origin. A growing number of countries — both developed and developing — have decided to convert their research reactors and other facilities from using HEU to LEU. Work has also began, including under the Agency's auspices, on addressing the issue of converting molybdenum-99 production processes from the use of HEU to LEU targets.

7. At the request of its Member States, the IAEA has been involved for many years in supporting their efforts towards reducing the uses of and commerce in HEU. Through its scientific databases and its extensive field operations, the Agency has helped national, bilateral and international programmes to identify and secure, recover, or facilitate the safeguarded disposition of fresh and spent HEU reactor fuel. While ensuring that this work satisfies relevant safety standards, the Agency has supported the conversion from HEU to LEU of nuclear research facilities for which suitable replacement fuel was qualified and

available. With regard to the latter, the Agency has continued to call for and support international efforts for the development and qualification of high density LEU fuels, with the goal of allowing research reactors with the highest power and neutron flux to make the HEU-to-LEU conversion without incurring significant penalty to their technical parameters. More recently, the Agency has taken a leading role in developing techniques to convert small scale medical isotope production processes to LEU-based processes.

8. I would also call your attention to the increasing involvement of civil society in these efforts, raising awareness of the problem and supporting change. A good example is that of the Nuclear Threat Initiative (NTI), which just last year completed a project with the Government of Kazakhstan that successfully ‘downblended’ nearly 3000 kilograms of fresh HEU fuel to LEU, and placed it in secure storage.

9. Although much has been achieved so far, much vulnerability remains. These vulnerabilities, including the clear signs of terrorists trying to acquire nuclear material through criminal networks, were the primary reasons for which Minister Gahr Støre and I called in our recent article for more vigorous and effective actions towards minimizing the civilian uses of HEU. In my view, we need to continue working with a sense of urgency, and through more coherent global action. As I see them, some of the urgent measures that would be needed are as follows:

(i) The countries involved should join forces to step up their efforts towards minimizing and eventually eliminating the civilian use of HEU. Joint research should be conducted to address the remaining technical hurdles involved in converting from HEU to LEU the operations of facilities (including research and large pulse reactors as well as critical facilities) and the production processes for medical isotopes. The commercial interests of the companies concerned should be protected, and the conversion work should ensure that reactors are converted in a safe and secure manner, without significant operational losses and without substantially altering the scientific mission or functions of the reactors. Financing and other incentives should be made available where needed to assist countries with conversion operations. The development of high-density LEU fuels should be intensified, to enable broader and more rapid repatriation of used and unused HEU fuel to the countries of origin for downblending and reuse.

(ii) All countries should agree to stop producing fissile material for use in nuclear weapons. The elements are already in place for such an agreement, in the form of the proposed Fissile Material Cut-off Treaty. It is high time to negotiate and conclude such a treaty.

(iii) To build confidence, countries with civilian and military HEU stockpiles should release clear inventories of those stockpiles and publish a schedule under which the remaining HEU will be verifiably downblended.

10. By investing in these measures, we could alleviate proliferation concerns associated with the continued uses of HEU and reduce substantially the risk of nuclear terrorism. I believe that this is an initiative in which all countries — Nuclear Weapon States and Non-Nuclear Weapon States alike — could play a role, and from which all would clearly benefit. The Agency stands ready to continue to take its share from this work through supporting and assisting its member States in their relating efforts.

11. In closing, I would like to thank the Government of Norway, in particular Minister Gahr Støre and his team, as well as Mr. Harbitz of the National Radiation Protection Authority and his team, for making this timely and important event possible.