



The Non-Proliferation Treaty Review Conference: **Breakthrough or Bust in '05?**

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The Nuclear Fuel Cycle: The “Achilles Heel” of the Non- Proliferation Regime?

Background

Under Article IV of the Non-Proliferation Treaty (NPT), all States Parties have the “inalienable right to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II”. Also under Article IV, all states have “the right to participate in the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy”. Thus a party to the NPT in good standing is allowed the means to produce highly enriched uranium (HEU) and plutonium - key nuclear weapons (“fissile”) materials that also have commercial uses - and stockpile them without limit as long as they are placed under International Atomic Energy Agency (IAEA) safeguards.

While exact quantities are unknown, estimates put the total global quantity of fissile material at more than 3,700 metric tons, theoretically enough for hundreds of thousands of nuclear weapons, in about 50 countries. This stockpile grows each year, along with the difficulty of ensuring that such material is not diverted. In short, the development of nuclear power as a source of energy makes it more likely that materials are diverted into nuclear weapons programmes.

Worries about dual-use enrichment and reprocessing technology are not new and received much attention in the 1970s, soon after the NPT was signed. However, Iranian pursuit of a broad nuclear technology programme, and nuclear weapons developments in India, Iraq, Libya, North Korea and Pakistan (all of which involved the use of civil nuclear energy as cover), have prompted many states to re-think the basic nuclear technology bargain.

The balancing of rights of States Parties to have nuclear technology (under Article IV) while addressing the proliferation threat posed by the development of such technology will be a key issue at the 2005 Review Conference. But while attention has been drawn to the dangers involved

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in the widespread proliferation of uranium enrichment and plutonium reprocessing technology, there is no international consensus on how to deal with the problem.

Recent Developments

The proposal that adherence to the Additional Protocol on Safeguards should be the compliance norm for any country seeking nuclear technology for commercial purposes was discussed and endorsed in *Briefing No.12*. A number of key actors have put forward further far-reaching proposals:

■ In February 2004, President Bush proposed to cap the group of enriching states, and the G8 responded by declaring a one-year moratorium on supply to non-possessing states.

■ In February 2005, Mohamed ElBaradei, the IAEA Director General, proposed a five-year moratorium on building new facilities for uranium enrichment and plutonium separation, with guaranteed supply of nuclear fuel for bona fide uses. He also suggested that the five-year hiatus be used to develop better long-term options for managing these technologies, such as regional centres under multilateral control. Multilateral ownership of all civilian enrichment facilities and possibly other sensitive parts of the nuclear fuel cycle was backed by a recent IAEA Expert Group study.

■ The UN High Level Panel recommended a combination of voluntary action and multilateral control. It called for a temporary moratorium on the construction of enrichment and reprocessing facilities, with fissile materials supplied at current market prices, while a new multilateral agreement is negotiated under which the IAEA would act as guarantor for the supply of fissile materials for non-military use.

Some proposals envision different rules for different states depending on their non-proliferation and security records. Such new rules could be imposed through supplier cartels such as the Nuclear Suppliers Group, but would inevitably exclude many export capable states. Any permanent renunciation of certain fuel cycle capabilities would amount to a formal change in the “bargain” of the NPT. As the IAEA Expert Group notes:

A new binding international norm stipulating that sensitive fuel cycle activities are to be conducted exclusively in the context of Multilateral Nuclear Approaches and no longer as a national undertaking would amount to a change in the scope of Article IV of the NPT.

Peaceful Nuclear Energy: An Oxymoron?

In the 1960s, nuclear power was seen as clean, safe and efficient. And ‘Atoms for Peace’ formed a key foundation stone for the NPT. But atti-



tudes towards nuclear power have changed over the ensuing decades and many countries have started to phase it out of their energy mix or have avoided it altogether. Despite a recent renaissance, owing to the decline of fossil fuels, climate change and the lobbying power of the nuclear industry, nuclear power remains a highly controversial energy choice for long-standing economic, environmental and security reasons.

Although the reactor does not directly produce any greenhouse gasses, the nuclear fuel chain, and especially the production of construction materials, is a significant source of such emissions. Problems of the disposal of radioactive waste, and radioactive contamination of the air, water and land at all points in the life cycle of a nuclear reactor, are major disincentives to reviving the industry's fortunes.

An alternative, proposed by Leonard Weiss of the Arms Control Association, would be to explore how to develop an 'Energy for Peace' Programme, that would "...include cooperative assistance in energy planning to help determine the best, most efficient mix of energy technologies for individual countries. ...nuclear energy would be used only if it competed with alternative sources, taking into account environmental and other costs, including security". (http://www.armscontrol.org/act/2005_03/Weiss.asp) However, given the potential of solar power and other renewable technologies there may be no need to use nuclear power at all.

This suggestion could be extended to the development of an International Sustainable Energy Fund (ISEF), of a scale of at least the equivalence of the G8 Global Partnership Programme (designed to safeguard the weapons complex of the FSU). As a substitute for 'Atoms for Peace', the ISEF would promote in the NNWS renewable technologies, energy efficiency and new applications that are clean, safe and inexhaustible in supply. Part of the funding for the ISEF could come from monies saved from phasing out subsidies for conventional and nuclear energy production and consumption in industrialized countries. Such a Fund would help assure a safer, cleaner world with access to more affordable and more reliable energy.

Future Prospects

The 2005 Review Conference provides a unique opportunity to establish greater levels of international cooperation in setting a higher universal norm in controlling dangerous fissile materials. Past initiatives failed because proliferation concerns were not seen as serious enough and economic incentives were insufficient. Concerns about security of fuel supply were also central, especially among NNWS. Most NNWS regard access to nuclear technology as their right under Article IV of the NPT, and further resent what they regard as the implication that developing countries are not to be trusted with technology possessed by some developed states.



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While most NNWS, for several reasons, are reluctant to give up this right, they might be prepared to entertain a “new bargain”, provided that:

- it is realised by universal principles applying to all States;
- the NWS take additional steps towards nuclear disarmament and commit to similar constraints; and
- a verifiable Fissile Material Cut-Off Treaty (FMCT) is included in the agreement (since this would eventually bring NWS and non-NPT States Parties to the same level as NNWS).

The new restrictions would then apply to all States and facilities, without exception. Thus, delegates at the Review Conference have an opportunity to strengthen the non-proliferation regime at a time when it is under serious stress. Multilateral controls on the nuclear fuel cycle would also buy time in which to consider more sustainable ways to meet our energy needs. The conversion to a renewable energy economy is not a problem of limited technologies but of political priorities.

Recommendations

States Parties should:

1. Take steps to strengthen overall controls on the nuclear fuel cycle and the transfer of technology, including safeguards and export controls;
2. For reasons of effectiveness, legitimacy and promotion of global norms generally, seriously develop proposals for multilateral controls over the sensitive parts of the nuclear fuel cycle; and
3. For reasons of cost, sustainable development and non-proliferation, seriously develop proposals for an ‘Energy for Peace’ Programme and establish an International Sustainable Energy Fund.

British American Security Information Council (BASIC)

The Grayston Centre, 28 Charles Square, London N1 6HT
tel: +44 (0)20 7324 4680
110 Maryland Ave., N.E., Suite 205, Washington DC 20002
tel: +1 202 546 8055
web: www.basicint.org

Oxford Research Group (ORG)

51 Plantation Road, Oxford, OX2 6JE, UK
tel: +44 (0)1865 242819
web: www.oxfordresearchgroup.org.uk