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PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 39 **NEWSBRIEF** **3rd Quarter 1997**

Editorial Note

The **Newsbrief** is published every three months, under the auspices of the Programme for Promoting Nuclear Non-Proliferation (PPNN). It contains information about the actual or potential spread of nuclear weapons and about moves to prevent that spread; it also refers to relevant developments in the realm of the peaceful use of nuclear energy. The contents of the **Newsbrief** are based on publicly available material, chosen and presented so as to give an accurate and balanced depiction of pertinent events and situations.

This issue of the **Newsbrief** covers the period 1 July to 8 October 1997. The ending date was chosen so as to span the 41st Regular Session of the General Conference of the International Atomic Energy Agency (29 September-3 October) and the international seminar on the 'Role of Export Control in Nuclear Non-Proliferation' that was also held in Vienna, under the auspices of the Nuclear Suppliers Group, on 7 and 8 October.

The format of the **Newsbrief** makes it necessary to choose among available items of information and present them in condensed form. Another reason for careful selection is that an event may be reported in more than one publication and in widely different ways, sometimes complementary but often also contradictory. Yet another ground for cautious culling is the speculative nature of many media reports. Such reports are used here only if there is reliable back-up information or if the fact of their publication appears relevant in the framework of the **Newsbrief**.

Subheadings used in the **Newsbrief** are meant to facilitate presentation and are not intended as judgements on the nature of the events covered. On occasion, related developments that might logically be dealt with under separate subheadings are combined under a single subheading if doing so makes the text more easily readable. Starting with this issue, the section formerly headed **Illicit Nuclear Trafficking** carries the heading **Nuclear Material Trafficking and Physical Security.**

PPNN's Executive Chairman, Ben Sanders, is editor of the **Newsbrief**. He produces it and takes sole responsibility for its contents. The inclusion of an item does not necessarily imply the concurrence by the members of PPNN's Core Group, collectively or individually, either with its substance or with its relevance to PPNN's activities.

Readers who wish to comment on the substance of the **Newsbrief** or on the way any item is presented, or who wish to draw attention to information they think should be included, are invited to send their remarks to the editor for possible publication.

I. Topical Developments

a. The NPT

- On 20 June, the President of the **Republic of Brazil** submitted the Treaty on the Non-Proliferation of Nuclear Weapons to the National Congress for approval. (**Communication by the President of Brazil to the National Congress**, 20/6; **Statement by**

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Permanent Representative of Brazil to the Conference on Disarmament, Geneva, 26/6)

b. Further Non-Proliferation Developments

- On 7–8 October, in Vienna, the Nuclear Suppliers Group (NSG) held an **international seminar on the 'Role of Export Control in Nuclear Non-Proliferation'**. The event was intended as a step in promoting the goal of transparency within a framework of dialogue and cooperation on the role of export controls. The seminar was chaired by Mr. Abdul S. Minty, Chairperson of the South African Council for the Non-Proliferation of Weapons of Mass Destruction. It was attended by representatives of 67 states, 29 of them members of the NSG; by representatives of intergovernmental organisations; and by specialists on the subject from industry and academic institutions. Regret was expressed at the absence of a representative of the government of China, one of the principal supplier nations. Keynote speakers were 1) Dr. Hans Blix, Director General of the IAEA, who spoke about *The international non-proliferation regime*; 2) Mr. Carl Thorne, of the US, former Chair of the NSG Working Group on Dual Use items, who made a presentation on *Export controls and their role in nuclear non-proliferation*; 3) Dr. Roger Heathcote, member of the IAEA Board of Governors for the UK, who addressed *The practice of export controls: Effect on nuclear trade, how they work, and how they are implemented*; and 4) Ambassador Pasi Patokallio, former Chairman of the NSG and Chairman of the First Session of the Preparatory Committee for the 2000 Review Conference of the NPT, who dealt with *The future of export controls in international nuclear non-proliferation.* Comments on these four addresses were given on the first statement by Dr. Fritz Schmidt, Chair of the Zangger Committee and Dr. P. Rama Rao, President, Indian Academy of Sciences; on the second statement by Ambassador M.S. Ayatollahi, Permanent Representative of the Islamic Republic of Iran to the IAEA and Ms Carmen Richter Ribeiro Moura, Ministry of External Relations, Brazil; on the third statement by Mr. Toshiki Miyamoto, Chairman, Nuclear Energy Systems Steering Committee and the Electrical Manufacturers Association of Japan, and Mr. Freddy Sagala, Deputy Director General for Administration, National Atomic Energy Agency, Indonesia; and on the fourth statement by Dr. Harald Müller, Director, Peace Research Institute Frankfurt, and Mr. Jan Hoekema, former Chairman of the NSG, member of the Netherlands Parliament. The interventions were followed by further comments from participants. The seminar ended with a panel discussion among keynote speakers and commentators. The proceedings were informal; no records were kept. Participants generally deemed the event to have been very useful; there were many calls for some form of follow-up action. Organiser of the seminar was Ms Martine Letts, Permanent Mission of Australia, Vienna and coordinator of the NSG Working Group on Transparency; Programme Coordinator was Mr. Kees Nederlof, Netherlands Permanent Mission, Vienna.

  According to an earlier report, Indian officials blame the NSG for having organised a 'boycott' that prevents it from obtaining natural uranium for its unsafeguarded Candu-type power reactors. NSG rules provide that any export of 'source material', including uranium, is conditioned upon the application of comprehensive IAEA safeguards in the recipient state.

  (**NuclearFuel**, 11/8; **Direct Information**. For up-to-date information on NSG see **IAEA Documents INFCIRC/254/Rev.2/Part 2/Mod.1**, 19/3/1996; **INFCIRC/539**, 15/9; and **INFCIRC/254/Rev.3/Part 1**, 16/9)

- At a meeting in July of the Foreign Ministers of the **Association of South East Asian Nations** (ASEAN), the working group of senior officials dealing with the South East Asian Nuclear-Weapon-Free Zone Treaty (SEANWFZ) was given a mandate to pursue consultations with the nuclear-weapon states on their accession to the protocol of that Treaty. (**Business Times** [Asia], 26/7)

- On 10 July, the General Conference of the **Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL)** held its fifteenth regular session in Mexico City. The General Conference re-elected by acclamation Ambassador Enrique Román-Morey as Secretary General of OPANAL for an additional four-year term, from 1 January 1998 to 31 December 2001. [In his personal capacity, Amb. Román-Morey is a member of PPNN's Core Group — Ed.] Among resolutions adopted was one on the status of the Treaty of Tlatelolco and its additional protocols, in which, among other things, the Conference reiterated its hope that Cuba would ratify the Treaty as soon as possible; a modification in the Conference's Rules of Procedure making it possible for non-governmental organisations, upon decision of the General Conference, to attend sessions of that body; and a decision henceforth to hold the regular biannual session during the month of November. (**OPANAL DOCUMENTS** CG/Res.351 (XV), CG/Res.353, CG/RES.359, CG/Res.363)

- On 15–16 September an **international conference on Central Asia — Nuclear-Weapon-Free Zone**, was held by the Ministry of Foreign Affairs of Uzbekistan, with support from the Monterey Institute of International Studies. The conference was attended by, among others, foreign ministers or deputy foreign ministers from Uzbekistan, Kazakstan, Kyrgyzstan, Tadjikistan and Turkmenistan. At the conclusion of the conference the latter presented a statement, which is reproduced in **Section IV. Documentation** of this **Newsbrief**.

- On 19 September, the **United Kingdom** ratified the Protocols to the Rarotonga Treaty [see page 10].

c. Nuclear Disarmament and Arms Limitation

- In **Russia**, Alexei Arbatov, Deputy Chairman of the Defence Committee of the State Duma, has expressed misgivings about the effect NATO expansion may have on the ratification of the START II Treaty by the Duma, this Autumn. While Arbatov believes that the extension of the period for implementing the Treaty by

five years, agreed in Helsinki last March, and the appointment of the new Minister of Defence, who is an advocate of the Treaty, are factors favouring ratification, the concern raised by the expansion of NATO, together with the fact that START II calls for larger cuts on the part of Russia than those to be made by the US, will be a major impediment. On the other hand, an agreement reached in late September between Belarus, Kazakstan, the Russian Federation, Ukraine and the United States, after Arbatov published his views in the *New York Times*, is expected to clear the way for new talks on further cuts in nuclear arsenals and facilitate acceptance of START II by Russia's State Duma. The agreement gives Russia until the end of 2007 to dismantle launch and delivery systems as required by START II, which, however, have to be disabled by 2003. It also modifies the Anti-Ballistic Missile Treaty of 1972 by restricting the targets against which new missile systems may be tested, which in fact limits their velocity and range. At the same time, the new agreement is said to give new flexibility for the development of shorter-range missile defence systems. (**New York Times**, 26/8; **International Herald Tribune**, 29/9)

- In a message to the IAEA's General Conference, President Yeltsin of the **Russian Federation** announced that he had taken the decision '...to carry out the stage-by-stage withdrawal from nuclear military programmes of up to 500 tons of highly enriched uranium and up to 50 tons of plutonium released in the process of nuclear disarmament.' According to the message, '[The t]iming and pace of this process will depend both on the progress made in dismantling nuclear weapons under the existing agreements and on the construction of the required storage facilities for the material being withdrawn from military use. I believe that this decision will contribute directly to the irreversibility of nuclear disarmament process and to strengthening confidence and global stability'. (**Statement by the Head of the Delegation of the Russian Federation, Minister Viktor Mikhailov**, to the IAEA General Conference, 29/9; **Permanent Mission of the Russian Federation to the International Organizations in Vienna**, Press Release 29/9; **International Herald Tribune**, 30/9)

- At the 40th Regular Session of the IAEA's General Conference, in 1996, the Director General announced that consultations would be held between the Agency, the Russian Federation and the United States, on practical measures for the application of **IAEA verification to weapon-origin fissile materials**. Last year, a Joint Group was established for the purpose. This has met five times so far, for exploratory discussions to identify verification measures to be applied at the Mayak Fissile Material Storage Facility when that is commissioned, and at US facilities where identified weapon-origin fissile material will be submitted for verification. The Joint Group has addressed such issues as types and amounts of material that will be subject to verification; technologies that would meet the objectives without disclosing sensitive information; funding and providing a legal framework for the IAEA's measures. Visits to the respective facilities are being arranged and a further high-level meeting is foreseen for September 1998. According to reports in the American trade press, the Agency's views about the terms of access that should enable that body to obtain transparency of the verification arrangements for excess weapons material differ from those of the Russian Federation. As reported, the IAEA would wish to tag pit containers without measuring them, while Russia fears that this might give the Agency information that could enable it to calculate the average amount of plutonium in warheads. (**SpentFUEL**, 4/8; **NuclearFuel**, 11/8; **Nucleonics Week**, 25/9; **Director General's statement**, 29/9; **IAEA Press Release** PR97/26, 30/9. See also **Newsbrief** 35, p. 7)

- During a visit to Moscow in September, the Prime Minister of **France**, Jacques Chirac, said that his country no longer deployed land-based nuclear missiles and that its 18 land-based missiles had been dismantled. (**International Herald Tribune**, 27-28/9)

- The French firm of Cogema and Germany's Siemens have reportedly completed the conceptual design of a pilot plant for fabricating plutonium from nuclear weapons into MOX fuel for **Russian** reactors. The plant, known as Demox, would recycle 1,300 kg of weapons-grade plutonium per year in four VVER-1000 reactors at Balakovol and the BN-600 fast-reactor at Beloyarsk. At the next stage of the project, in which the Russian Ministry for Nuclear Energy (Minatom) will be involved, cost estimates should be worked out. The meeting of the G-7 states and the Russian Federation that was held on 18–20 June in Denver, Colorado, had endorsed the idea of burning Russian weapons plutonium as MOX fuel in civil reactors. It is reported that following agreement between Minatom and Atomic Energy Canada, Ltd. the US and Russia could begin a joint test programme on burning surplus weapons plutonium as MOX fuel in Canadian reactors. It will still be necessary for an agreement to be concluded on the matter between Canada, Russia and the US, but expectations seem to be that the programme might get underway as early as mid-1998. The fuel would be manufactured at a Russian facility. (**SpentFUEL**, 7/7, 6/10; **NuclearFuel**, 14/7)

- At their meeting in September, the Prime Minister of **Russia**, Viktor Chernomyrdin, and **United States** Vice President Al Gore signed an agreement providing for the conversion, with US assistance, of the three dual-use plutonium production reactors that are still operating at Krasnoyarsk-26 and Tomsk-7, to purely civilian uses. The project, which will start in the year 2000, will cost $150 million, of which the US is to contribute $80 million. Further, Messrs Chernomyrdin and Gore agreed to expand materials protection, control, and accounting under the bilateral lab-to-lab programme to Russia's four weapons dismantlement facilities. (**US Statement to IAEA General Conference**; **Direct Information**)

- A study by the Royal Society of the **United Kingdom** that will be published in October is expected to stress the commercial advantages in using the growing stockpile of separated civilian plutonium in that country as MOX fuel that could be leased to reactor operators around the world. (**Nucleonics Week**, 17/7)

- On 17 July the **United States** Department of Energy (DoE) released for public comment its proposed acquisition strategy for obtaining fuel fabrication and reactor irradiation services as part of the MOX alternative for disposing of excess weapons plutonium. Reportedly, the document is so conceived as to give preference to the use of US facilities and to the involvement of American companies; DOE is said to favour working with consortia, but those must be led by a US-owned reactor licensee. The move had been delayed past seven previous deadlines, for which no obvious reason was given; this is said to have led to concern in the US Congress that the delay would cause reluctance in Russia to engage in fissile material disposal as that would be predicated on the clear assurance that the US would take a similar action. Meanwhile, four groups of American and European nuclear firms are said to be preparing to bid on the project. DoE has been gathering suggestions as to the ways it might procure MOX fuel services. One item under discussion is said to be how foreign-controlled firms would be involved.

  There is still considerable disagreement as to which option should be adopted to dispose of excess weapons plutonium. In an article in the *Washington Post*, Nobel prize winner Glenn T. Seaborg, co-discoverer of plutonium, has supported the burning of separated plutonium as MOX fuel as 'a highly effective process for disabling plutonium'. In a letter to the same daily newspaper, US Congressman Edward J. Markey strongly disagrees because doing so would, in his view, risk creating a civilian plutonium economy that would supply an incentive to the production of more plutonium. Markey consequently calls for the immobilisation of plutonium in glass, for deep burial.

  There is a report that unbeknownst to DoE, the Office of Environmental Management has asked the Rand Corp. to make a study of the MOX option for disposal of surplus weapons plutonium. In the study, Rand is said to conclude that burning such material in commercial reactors would cost significantly more than vitrifying it. DoE claims that the study is based on incomplete information and was prepared by a long-time critic of the MOX initiative.

  In a recommendation to DoE, the Lawrence Livermore National Laboratory takes the position that immobilising excess plutonium in ceramic is more advantageous than vitrification. One consideration is that ceramic is more proliferation resistant.

  (**SpentFUEL**, 7/7, 21/7, 28/7, 1/9, 15/9; **Nucleonics Week**, 17/7, 24/7, 31/7, 28/8; **PR Newswire**, 18/7, in **UI Newsbriefing**, 97.29; **NuclearFuel**, 28/7; **Washington Post**, 3/8, 20/8. See also **Newsbrief** No. 38, page 5)

d. Nuclear Testing

- On 8 July, Japan deposited its ratification of the **Comprehensive Test Ban Treaty** (CTBT). It was the first of the 44 countries whose ratification is necessary for the Treaty to enter into force. Other states that have ratified are the Czech Republic, Fiji, Micronesia, Mongolia, Morocco, Qatar, and Uzbekistan. As of 24 September (i.e., one year after the Treaty was opened for signature) 146 states had signed the Treaty. In a speech to the 52nd regular session of the General Assembly, on 22 September, President Clinton announced that he was submitting the Treaty to the Senate for approval. (**Information Note** 9/7 from the Provision Technical Secretariat of the Preparatory Commission for the CTBT; **Fact Sheet of the US Arms Control and Disarmament Agency**, 18/9; **Associated Press**, 22/9; **New York Times**, 23/9)

- During a visit to Islamabad, the Foreign Minister of **Japan** is said to have urged **Pakistan** to join the CTBT ahead of India. Reportedly, the Pakistani response was that, as in the case of the NPT, it would be willing to sign the CTBT simultaneously with India. (**Nucleonics Week**, 31/7)

- In a joint project with **Kazakstan**, the **United States** is reported to be using military aircraft equipped with sophisticated scanners to obtain data from the former nuclear test-site at Semipalatinsk. Russia is said to have expressed objections to the project, which it has said amounts to spying, and has asked for it to be stopped. (**Financial Times**, 27/6)

- US officials said on 28 August that **Russia** might have set off a nuclear explosion at its testing site at the island of Novaya Zemlya. A spokesman of the US Department of Defense was quoted as saying that on 16 August a 'seismic event' was noted which 'had characteristics that at least would lead some to believe that there had been an explosion that caused the event'. The spokesman added that some other natural phenomenon could not be ruled out. US experts reveal that seismic data correlations appear to place the event off-shore and not encompassing the test site. The 'seismic event' was also noted in Norway and the UK, but was apparently not interpreted there as indicating a nuclear explosion. Russian sources have denied that a nuclear explosion has taken place. Reportedly, however, they have also said that, like the US, they plan to conduct subcritical experiments. (**Washington Post**, 29/8; **New York Times**, 29/8; **Reuters**, 29/8; **Online Nuclear Futures Forum**, 4/9)

- Allegations have surfaced once again that a flash of light over the Indian Ocean on 22 September 1979, which was detected by an American Vela satellite deployed to monitor compliance with the Limited Test Ban Treaty of 1963, was caused by the explosion of a **South African** nuclear device in the upper atmosphere. At the time, the phenomenon was investigated by an American presidential scientific committee, which concluded that the evidence was too weak to confirm that a nuclear test had taken place. As now reported, the Vela satellite was operating beyond its normal life span and one of its sensors was defective. Experts from the US scientific and intelligence communities have always insisted that the flash was a clear indication of a nuclear test; additional evidence had been found in the form of an ionospheric disturbance discovered by a radiotelescope. At the time, there were suggestions that Israel had assisted in the experiment and had supplied tritium and scientific information. The new allegations follow a statement by South African deputy Foreign

Minister Aziz Pahad which was quoted in an article in the Jerusalem daily newspaper *Ha'aretz* of 20 April. (**Los Alamos National Laboratory News Bulletin — online**, 11/7; **Aviation Week & Space Technology**, 21/7; **Libération**, 25/7)

- In the **United States**, on 2 July, the first of two 'subcritical' underground test explosions planned for 1997 was carried out in a 300-metre shaft at the Nevada test site. Official US sources describe the event as a scientific experiment 'to obtain technical information ... to maintain the safety and reliability of the US nuclear weapons stockpile without nuclear testing'. The experiment uses conventional explosives to generate high pressures that will be applied to nuclear weapon materials such as plutonium, but the configuration and quantities of explosives and nuclear materials are such that no nuclear explosion takes place, i.e., no self-sustaining nuclear fission chain reaction will occur. This consideration is the basis for the US Administration's contention that these experiments do not violate the CTBT. A spokesman for the CTBTO, the Vienna organisation charged with the implementation of the Treaty, has taken the same position.

  The 2 July test, code-named 'Rebound', was sponsored by the Los Alamos National Laboratory; the second subcritical explosion planned for 1997, which is code-named 'Holog', is sponsored by the Lawrence Livermore National Laboratory. Reportedly, four more tests are planned for 1998. The experiments have rekindled discussion about nuclear testing in the US, where the Senate may soon debate the ratification of the CTBT. American conservative politicians, as well as some scientists at nuclear weapons laboratories, contend that the reliability of the US nuclear arsenal can only be assured by periodic test explosions. A number of advocates of arms-control, on the other hand, hold that the nuclear stockpile can be maintained reliably even without subcritical tests.

  The test has led to protests from a wide variety of organisations, including arms-control advocates and environmentalists. Critics claim that these tests violate the spirit of the CTBT and set a negative precedent for would-be nuclear proliferators, as well as for China and Russia; International Physicians for the Prevention of Nuclear War, Inc. also warned that serious accidents and the uncontrolled escape of radioactivity cannot be excluded. A number of members of the US House of Representatives have written to the President requesting him to cancel further subcritical tests. Arms control experts have asked the Administration to permit international inspections to ascertain that the explosions were indeed non-nuclear and did not violate the CTBT. An American federal court has rejected the call of a number of environmentalist groups for an immediate stop to the tests which, they claimed, are carried out without regard to their ecological impact.

  Outside the US the July test has also brought negative reactions. China has said that it would keep a close eye on these experiments. Criticism was expressed in the German Parliament. There were extensive protests in Japan; the mayors of Hiroshima and Nagasaki expressed their strong opposition. A spokesman for the government of Japan said that while subcritical testing was not banned under the CTBT it should be examined in the future.

  (**New York Times**, 1/7; **DoE Press Release** R97064, 2/7; **Süddeutsche Zeitung**, 2/7, 3/7; **Kyodo News Service** [Tokyo], 3/7, in **BBC Monitoring Summary of World Broadcasts**, 4/7; **Frankfurter Allgemeine Zeitung**, 3/7; **Reuters**, 3/7; **International Herald Tribune**, 4/7; **Die Presse**, 4/7; **Neue Zürcher Zeitung**, 4/7, 13/8; **Die Welt**, 4/7)

- Also in the **United States**, a report from the National Cancer Institute indicates that the 90 atmospheric nuclear tests set off over Nevada between 1951 and 1962 have caused a greater fallout of radioactive iodine than had originally been estimated. The study, which was commissioned in 1982 and completed in draft in 1984, is said to be meant for internal use of DoE. A version of the draft released in late July says that according to formulas in international use for calculating radiation damage, the doses were large enough to produce 25,000 to 50,000 cases of thyroid cancer around the country. Reportedly, the study found iodine^{131} 'hot spots' mainly over the western states, notably Idaho and Montana, but also over New York and Massachusetts. In a modified version of the study, released in August, the National Cancer Institute cites the number of cases of thyroid cancer that might be fallout-related as between 10,000 and 75,000, of which 70 per cent have not yet been diagnosed because they concern persons who were less than 5 years old at the time (1952, 1953, 1955 and 1957). Ten per cent of the cases are expected to be fatal. It is pointed out, however, that the assessment of the risk of cancer caused by the exposures has not yet been completed and experts warn against drawing hasty conclusions from the figures so far disclosed; it is anticipated that another three to five years will be needed before the risk of thyroid cancer that may be ascribed to radioactive fallout can be fully assessed.

  It is now known that while in the 1950s the US government repeatedly assured the public that atmospheric nuclear tests did not pose a risk to health, it warned the Eastman Kodak company and other film manufacturers that fallout could damage their products. Apparently, Kodak had found that some of its film was fogged because it was packed in material that had been contaminated by fallout, and had threatened to sue the government.

  (**Washington Post**, 28/7; **New York Times**, 29/7, 2/8, 13/8, 30/9; **Nucleonics Week**, 7/8)

- As announced at the 1996 session of the General Conference of the IAEA, that organisation has become involved in the **examination of former nuclear-test sites** to assess the extent to which past tests have left radiological hazards. This work is done as a service in the area of radiation protection, with the help of various international groups of scientific experts. Investigations have been made at Semipalatinsk, in Kazakstan, and at the Bikini Atoll in the Marshall Islands. A study of the radiological situation at the Atolls of Mururoa and Fangataufa in French Polynesia is being made by several task and working groups, operating under the supervision of an international advisory committee.

The results of the study, which is largely financed by the French government, is expected to be submitted to the Agency in the first half of 1998. (**IAEA's Nuclear Safety Review 1996**, pp. 5-60; **Director General's statement**, 29/9; **IAEA Document GOV/INF/815-GC(41)/INF/6**, 12/8)

e. Nuclear Trade and International Cooperation

- Notwithstanding growing opposition in the Congress, the US Administration hopes to be able to certify **China**'s nuclear non-proliferation credentials by late October, when President Jiang Zemin will pay a state visit to Washington. Presidential certification that China meets the nuclear non-proliferation goals necessary for implementation of the 1985 US–China nuclear cooperation agreement is a precondition for American industry to engage in nuclear commerce in China. There is said to be disagreement within the Administration about the desirable scope of the certification: the Departments of State, Commerce and Energy and the National Security Council are said to be willing to let the certification cover only nuclear matters, while the Arms Control and Disarmament Agency (ACDA) and the Department of Defense (DoD) attach immediate concern also to Chinese exports of chemical-weapon and missile technology, and would have the certification extend to those areas as well. Seeking assurances extending also to the latter areas would presumably be time consuming.

  On the other hand, a group of Senators from both parties, including the Chairman of the Senate Foreign Relations Committee, Helms, have introduced a bill that aims at influencing Chinese policy by threatening US sanctions in the case that China continues to fail making progress on matters such as human rights and non-proliferation.

  The issue of certification is a matter of great importance to the US nuclear industry, which has warned the Clinton Administration that the absence of certification and therefore its continuing inability to trade in the growing Chinese nuclear market would lead to huge job losses and might spell the end of America's nuclear industry. An industry-funded report by the Center for Strategic and International Studies (CSIS) says that it is strongly in the interest of the US to open up the Chinese market to US nuclear power vendors. According to Republican Senator Murkowski, who is a member of the CSIS group which produced the report, lifting the ban on exports to China could support more than 24,500 US jobs. Other conservative political and industry-oriented sources also advocate an early end to the ban on nuclear trade.

  Talks between the two countries about certification apparently started in early 1996 and have proceeded at various levels. Progress was reported recently in discussions between US officials and the China National Nuclear Corp., which is the country's main seller of nuclear items and which also controls exports. Senior US Administration officials, including national security advisor Berger, have visited Beijing in preparation for the state visit of China's President and are said to have explained to all concerned the US requirements that would make a resumption of nuclear trade possible. One of these is the condition that China should provide assurances that its nuclear export control system is functioning properly. Reportedly, it has made progress in establishing such a system for nuclear materials and technology, but the US is pressing it to extend the system to dual-use items. A draft regulation on nuclear export controls was approved in early August by the Chinese State Council, but Washington wishes to be ensured that this has been put into actual effect. China's extensive statement at the IAEA's General Conference, regarding its current export policy, should be seen in this context [see below, page 9]. China's announcement that it hopes to join the Zangger Committee (the body that draws up lists of nuclear items of which the export should 'trigger' the application of IAEA safeguards) as a full member has drawn general attention, as has the fact that it does not demand full-scope safeguards with respect to such exports.

  American officials seem to be confident that China has indeed stopped the export of parts for enrichment plants in Pakistan. Washington hopes in particular to receive credible assurances that China does not provide heavy water to the unsafeguarded natural-uranium reactor at Khushab [see also item **i. Proliferation-Related Developments**, page 18–19] but it is also determined to ensure that Chinese heavy water supplied for use at the Kanupp power plant is not diverted to Khushab. American officials stress that while China must see to it that all of its ongoing exports to Pakistan's safeguarded nuclear programme are not diverted to clandestine use, once the certification is issued there will be no objection to the continuation of such exports.

  China is also said to have suspended the provision of power reactors, a zirconium processing plant and a uranium conversion facility to Iran, all items which at one time or another it had been understood to be planning to supply. An allegation in an American publication that China has already supplied Iran with a facility to reconvert UF_6 gas to uranium metal has been denied by US officials. Reportedly, China has agreed verbally not to make further nuclear exports to Iran but is apparently not willing to give a formal written commitment to this effect.

  Among moves by a number of non-proliferation advocacy groups, the Nuclear Control Institute (NCI) of Washington, D.C. has written to President Clinton to urge the Administration, before it certifies China's non-proliferation credentials, to obtain clear evidence from Beijing that it is adhering to global standards of non-proliferation, and its export control regime is effective. NCI is also quoted as saying that Washington should require that China formally cease reprocessing its civilian spent fuel, that US nuclear items should be supplied to China only under IAEA safeguards, and that Beijing should agree to accepting the principle of full-scope safeguards as a condition of nuclear supplies. The Institute has also expressed concern about the verifiability of Chinese pledges regarding supplies to Pakistan and in particular, about the possibility that heavy water ostensibly supplied for the Kanupp power reactor might be diverted to Kushab. As this **Newsbrief** was going to press, the US

Congress, apparently moved by concern that a decision by the White House in favour of certification would be based on the wish to advance trade with China rather than on serious non-proliferation considerations, had scheduled hearings on the matter, at which NCI was to testify.

(**NuclearFuel**, 28/7, 11/8, 8/9, 6/10; **Nucleonics Week**, 7/8, 14/8, 21/8, 25/9, 2/10; **SpentFuel**, 4/8, 11/8, 29/9; **New York Times**, 18/8; **Direct Information** from NCI. See also **Newsbrief** No. 36, page 6, No. 37, page 3, and No. 38, pages 4 and 6)

- **Iran** and **Russia** have once again discussed their nuclear cooperation and are said to have concluded an agreement on supervision of design and construction of the Bushehr nuclear power plant. Western officials are cited as saying that the first of the two VVER-1000 reactor units to be built there is not likely to be finished before 2003 or 2004, but Iranian and Russian sources have repeated the claim that the first unit would be completed 'soon'; the head of the Iranian Atomic Energy Organisation had been quoted earlier in the year as saying it would be on stream in three years. Reportedly, the discussions between the two countries raise concern in Washington, where the view is that the extent of their cooperation may go beyond that to which Moscow had previously promised the US to limit itself; there are said to be indications that Russia's technological cooperation with Iran is continuing at the same level as before, notwithstanding repeated American interventions at the highest level. One issue is said to be whether Russia will adhere to its undertaking not to sell Iran uranium enrichment technology. Another source of concern appears to be the alleged acquisition by Iran of Russian information and know-how related to missile development. On 26 September, President Boris Yeltsin formally denied that his country had supplied nuclear-weapon or ballistic missile technology to Iran. His statement is seen as a response to US Vice-President Gore's allegation that according to 'new information', Iran was making a vigorous effort to obtain such technology. Yeltsin's statement is a repetition of previous assurances on the subject. There has also been a report that Russia had suggested to the US to join it in ensuring the peaceful use of the Bushehr plant but Iran has rejected this idea. Despite Russia's assurances, American observers hold the view that its controls have been lax on quasi-governmental and private businesses, especially those connected with the military-industrial complex of the former USSR. The US Congress is debating an amendment to the foreign operations appropriation bill that would cut off all aid to Russia unless the President can certify that it has ceased all nuclear and missile cooperation with Iran. Israel is said to be suspending cooperation with Russia on a number of projects — including, reportedly, upgrading military aircraft and armoured equipment — for as long as Moscow continues assisting Iran with nuclear and missile technology. (**Reuters**, 3/7, 7/7, 23/9; **Washington Post**, 3/7; **Nucleonics Week**, 24/7; **New York Times**, 22/8; **International Herald Tribune**, 27-28/9; **Die Presse**, 28/9; **Direct Information**. See also **i. Proliferation-Related Developments**, page 18)

- An amendment to the Defense Authorization Bill for the Fiscal Year 1998 submitted in the **United States** Senate, which sought to introduce a requirement for exporters of high-powered, dual-use computers (computers with a composite theoretical performance level equal to or greater than 2,000 million theoretical operations per second) to obtain individual validated export licenses, was defeated in favour of a provision requiring the Commerce Department to publish a list of countries posing proliferation risks.

  As part of the Enhanced Proliferation Control Initiative, the US Commerce Department has added twelve destinations in five countries to its 'Entities List' of places involved in nuclear weapons proliferation. As a result, the export of any item to the named entities, also referred to as 'entities of concern', which are in China, India, Israel, Pakistan, and Russia, will henceforth require export licenses. The list was published in the Federal Register on 30 June; it includes, in Russia, Chelyabinsk-70, and the All-Union Scientific Research Institute of Experimental Physics at Arzamas-16 and a series of institutes and centres associated with the Ministry for Atomic Power; in China, the Institute of Applied Physics and Computational Mathematics in Beijing, the High Power Laser Laboratory in Shanghai and a number of laboratories associated with the Chinese Academy of Engineering Physics in and near Mianyang, Sichuan province; in India, the Bhaba Atomic Research Centre, the Indira Ghandi Centre for Atomic Research, and Indian Rare Earths, Ltd.; in Pakistan, Khan Research Laboratory, Kahuta, the Pakistan Institute for Nuclear Science and Technology, and New Labs, in Rawalpindi; and the Nuclear Research Center in Dimona, Israel. The first items to require licenses are supercomputers. A number of these devices have recently been exported without licenses to China and Russia, where they are said to be used in particular in the design of nuclear warheads. This has been a topic of criticism by non-proliferation experts, who see the Administration as more responsive to the wishes of industry than to non-proliferation considerations. India is reported to have protested to the US against the measures affecting its scientific institutions.

  (**US Commerce Department Fact Sheet**, 30/6; **International Herald Tribune**, 2/7; **South China Morning Post**, 4/7, 5/7; **Congressional Record**, 9/7, pp. S-7098-7102; **Investor's Business Daily**, 21/7; **Reuters**, 5/8; **Direct Information**)

f. IAEA Developments

- A diplomatic conference to agree upon a **Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management** was held at IAEA headquarters in Vienna in the first week of September. The conference was attended by delegates from 82 IAEA member states and five international organisations. A draft text had been prepared between July 1995 and March 1997 by an international group of legal and technical experts. Initially, this pertained only to radioactive waste management but in the course of the deliberations it was agreed also to deal with spent fuel management, although the two issues are covered in

separate chapters of the document, to take account of objections such as those advanced by India, which considers spent fuel a potential energy resource rather than only waste. The text deals with radioactive waste and spent fuel from civilian activities and with materials of military origin that have been transferred to the civilian side. The Convention establishes a binding reporting system of radioactive waste and spent fuel, and on the measures taken by each state in this regard. It provides for peer reviews of national waste management programmes and sets standards for the pertinent infrastructure. Besides requiring signatories to establish an appropriate legislative and regulatory framework governing spent fuel and radwaste management, and providing adequate financial and human resources as well as adequate quality assurance, radiation protection, and emergency preparedness programmes, the Convention contains provisions for the discharge of radioactive waste and the handling of radiation sources that are no longer in use. Since it was not possible to reach agreement on the entire text, this was voted upon article by article and adopted as a whole. One particular point of contention was the issue whether advance notice should be given of spent fuel and waste shipments; among opponents of such a measure were France, Japan and the UK. (**IAEA Press Release** PR 97/16, 29/8, PR 97/17, 1/9; **Nucleonics Week**, 4/9; **New York Times**, 6/9; **NuclearFuel**, 8/9; **SpentFUEL**, 8/9. See also below with regard to the adoption of the relevant resolution by the IAEA's General Conference.)

- The **41st Regular Session of the IAEA's General Conference** was held in Vienna from 29 September to 3 October. It was attended by representatives of 113 member states and of seven states not members of the Agency. President was Professor Jerzy Niewodniczansky, head of the National Atomic Energy Agency of Poland.

  As the occasion of the fortieth anniversary of the IAEA and of the impending departure of Dr. Hans Blix, the Agency's Director General since 1981, and the appointment of Dr. Mohamed ElBaradei as his successor, this session was seen as an event of particular importance. In his traditional message, delivered in the opening session, the Secretary-General of the United Nations paid tribute to the departing Director General, and pledged cooperation and support to his successor. The message applauded the conclusion of efforts leading to several important new international instruments: the Convention on Nuclear Safety; the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management; the Convention on Supplementary Compensation for Nuclear Damage; and the Model Additional Protocol to strengthen the effectiveness and improve the efficiency of the Agency's safeguards. In that last connection, the message stressed the IAEA's safeguards functions as an integral part of the international non-proliferation regime and cited the Agency's efforts in implementing resolutions of the Security Council relating to Iraq and the Democratic People's Republic of Korea as a manifestation of the long tradition of close ties between the two organisations.

- The Agency's Director General listed some of the main achievements of the preceding year, which he characterised as an extremely productive one. Among other items he highlighted some 'spectacular results' in the field of technical cooperation, such as the eradication of rinderpest from most countries in Africa and the elimination of the tsetse fly from Zanzibar; the entry-into-force of the Convention on Nuclear Safety; the adoption of new legal instruments on liability for nuclear damage; the creation of the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management; the approval by the Board of Governors of the Additional Protocol to safeguards agreements and the programme of activities supplementing states' efforts to combat illicit trafficking in nuclear materials. Among activities mentioned in Dr. Blix's statement were cooperation in research and the transfer of nuclear technology, including assistance in strengthening radiation safety; safety assistance with respect to specific nuclear projects; the Agency's model project to help strengthen radiation safety in 53 countries; safety assistance in the operation of nuclear reactors; and the provision of data and analytical tools to help states assess their energy needs and policies, including the comparative analysis of health, environmental, safety and security aspects of nuclear as well as other energy options. The statement referred extensively to the recent approval by the Board of Governors of the Model Additional Protocol and called on states to adopt the Protocol, which would strengthen the safeguards system but also improve its cost efficiency. Dr. Blix spoke about the Agency's verification activities in Iraq, where it had been obliged, by Iraq's policy of concealment and obstruction, to rely on the results of its own inspections, and, among other things, on information from suppliers and governments to form a technically coherent picture of Iraq's 'vast programme'. The blank spots had become fewer, the Director General said, but one could be sure that there was still more to learn and it was not impossible that some equipment might still be undetected. However, as fewer questions posed themselves, the emphasis was shifting to ongoing monitoring and verification that should allow the Agency to strike the alarm if a renewal of the nuclear programme were to be undertaken. Referring to the DPRK, Dr. Blix said that while the Agency was asserting its right and duty to perform inspection under an NPT-type safeguards agreement which remained in force, it was verifying a freeze of the DPRK nuclear programme. He regretted to report that the measure of cooperation received from the DPRK had not increased and that accordingly the correctness and completeness of the initial inventory of plutonium declared by the DPRK could not be verified. Dr. Blix also reported progress in trilateral discussions about modalities of the Agency's verification that American and Russian nuclear material transferred from the defence sector remained peacefully stored or was rendered unusable for weapons purposes. He also spoke about the need for a ban on the production of fissile material and suggested that thought should be given to the creation of a special nuclear disarmament verification fund based on long term voluntary contributions. The Director General referred to the Agency's work in supplementing states' actions to counter illicit

trafficking in nuclear material and mentioned the Agency's database on reported cases. Relevant excerpts of the speech are reproduced in **Section IV. Documentation** of this **Newsbrief**.

- At the start of the session, the General Conference approved applications for membership in the Agency by Burkina Faso and Malta.

- The Conference further decided to hold its 42nd Regular Session in Vienna, from 21 to 25 September 1998.

- The General Conference approved the Agency's regular budget for 1998, which calls for expenditures of US $221,370,000, representing an expenditure increase of $421,000, or 0.2 per cent. It also approved a target of $71.5 million for voluntary contributions towards the Agency's Technical Assistance and Cooperation Fund for 1998 compared with $68 million for 1997. The portion of the regular budget to be spent under the (new) heading of Nuclear Verification and Security of Material is $79,127,000 of which $78,580,000 will be spent for safeguards, as against $78,191,000 in the budget for 1997, i.e., an increase of 0.5 per cent.

- The General Conference elected 11 new members to the Board of Governors for a two-year term, viz. Ghana, Hungary, Italy, Korea (Republic of), Mexico, Morocco, Pakistan, Peru, Slovenia, Sweden and Viet Nam. The other 24 members of the Board of Governors, which have either been designated by the Board or were elected by the General Conference in 1996, are Argentina, Australia, Belgium, Brazil, Canada, China, Colombia, Cuba, Czech Republic, France, Germany, India, Japan, Malaysia, Namibia, Netherlands, New Zealand, Portugal, Russian Federation, South Africa, Tunisia, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland and United States of America. (**IAEA Documents GC(41)/6**, 20/8; **GC(41)/30**, 1/10; **Press Release** PR 97/27, 2/10)

- The General Conference approved by acclamation, in accordance with Article VII of the Statute, the appointment of Dr. Mohamed ElBaradei to the post of Director General, to serve for four years from 1 December 1997 to 30 November 2001. Following a closed meeting on 4 June at which Dr. ElBaradei had received the support of the required two-thirds of the Board members expressing a preference, the Board on 5 June had appointed him by acclamation, as the next Director General. (**IAEA Document GC(41)/5**, 20/6). Also by acclamation, the Conference appointed the current Director General, Dr. Hans Blix, whose fourth term expires on 30 November, Director General Emeritus of the International Atomic Energy Agency. (**IAEA Document GC(41)/25**, 29/9; **IAEA Press Release** PR 97/25, 29/9)

- After taking the oath of office the Director General-elect made a statement in which he outlined three sets of tasks ahead: assistance to countries interested in peaceful application of nuclear technology to satisfy requirements for energy, food, health, water and other basic needs; consolidating the global safety regime as a comprehensive and coherent set of standards; and verification of undertakings not to develop nuclear weapons. To meet these challenges, he said a sustained commitment was needed to these three aims; a focused programme and clearly defined priorities; and adequate human and financial resources. He expressed his intention to review the Secretariat's organisational structure and management practices and he singled out combatting illicit trafficking in nuclear materials among new and additional tasks that would require fresh and additional funds.

- In the general debate, statements were made by representatives of 103 countries. Virtually all speakers expressed deep appreciation for the achievements of the outgoing Director General, Dr. Hans Blix, and pledged cooperation with his successor. Considerable attention was given to the adoption of the Model Additional Protocol for the strengthening of the safeguards system and the need for its early adoption by as many states as possible. Many delegates mentioned the various new conventions in the field of nuclear safety and radioactive waste. The issue of illicit trafficking in nuclear materials received more attention than it has received so far. Among points made some deserve special mention, including the statement by the delegate of Luxembourg, speaking on behalf of the European Union, who highlighted the need for universal adherence to the NPT, the need for a convention on the cut-off of fissile material production and the full implementation of Article VI of the NPT. Japan and the United Kingdom both spoke of the work done in a group of nine nations — Belgium, China, France, Germany, Japan, the Russian Federation, Switzerland, the United Kingdom and the United States — to achieve transparency in their plutonium holdings. The group had just reached agreement on a set of guidelines for the management of civil plutonium; these would shortly be sent to the Director General for publication.

  China referred to its nuclear export policy which adhered to the principle that items exported should only be used for peaceful purposes; that they should be subject to IAEA safeguards; and that they should not be retransferred without China's consent. It announced that it had decided to join the Zangger Committee — an announcement that, in light of an export policy which obviously does not include a demand for full-scope safeguards, led to some speculation about its consequences. Iran stressed the 'indisputable right' of all states to use the latest technology for the benefit of their people and mentioned the use of nuclear power in this context. The Iranian delegate claimed that 'some nuclear states' had engaged in a disinformation campaign against other countries, bringing accusations against their nuclear programmes. He called on the Agency to take decisive, unambiguous stands on these issues and said it should gather information by itself rather than relying on some states' technical facilities; the Agency, he said, should clearly announce its view about Iran nuclear programme to the world. India described its very comprehensive export control regime, which included a negative list for prohibited items, a list of prescribed substances and equipment for export

through specific organisations, and a special materials equipment and technology list for which licenses were handled by 'the nodal ministries'. The Indian representative stressed that these were 'self-imposed controls', which had insured that India had never exported any nuclear items that had been misused.

The prospects for nuclear power were assessed in a number of statements. The short-term outlook was generally negative but several delegates were confident that nuclear power would have an important role to play in the longer term, when atmospheric pollution caused by the use of fossil fuels would demand alternative energy sources, even if those were not economically competitive. The speech of Austria's Federal Chancellor [Prime Minister], who spoke on behalf of the host country at the opening session, attracted comment for its anti-nuclear stand, in particular for the statement that he did not consider nuclear power as compatible with the concept of sustainable development and that reliance on nuclear power could not be a viable option to combat the greenhouse effect.

Some other specific comments worth noting were the reference by the German delegate to the cooperation between her country, France and Russia on the construction of a pilot plant for the production of mixed-oxide fuel elements using plutonium from dismantled Russian weapons; the UK's announcement that on 19 September it had ratified the Protocols to the Treaty of Rarotonga; Japan's assurance that it held on to its predilection for a plutonium fuel cycle (notwithstanding some recent mishaps in this regard); and the announcement by the US that with 12 metric tons of fissile material excess to the military programme now under IAEA safeguards, and the 1996 pledge to make another 26 metric tons available for inspection, an additional 52 metric tons removed from military use would shortly be submitted to safeguards. The US called on other nuclear-weapon states besides itself and Russia to do the same. The US delegate also announced that his country had committed itself to remove 174 metric tons of highly enriched uranium from defence purposes and that the Agency would presently begin to inspect for the first time the blend-down of parts of this material. He further confirmed that his country and the Russian Federation had concluded an agreement to end the production of weapons-grade plutonium.

- The following subjects of substantive debate are singled out as being most relevant in the context of the Newsbrief. As the **Newsbrief** goes to press, final resolution numbers were not available. [General Conference Documents reproduced are in **Section IV. Documentation** of this **Newsbrief**.]

- As in 1996, the need to **strengthen the safeguards system and improve its efficiency** received much attention. Many states underlined the importance of the Model Additional Protocol which presents a legal basis for the Agency to apply those additional safeguards measures foreseen in its Programme 93+2 for which it considers that existing safeguards agreements concluded pursuant to Document INFCIRC/153 do not provide such basis. As of 30 September the Protocol had been signed by Australia, Armenia, Georgia, Philippines, Poland and Uruguay; a number of delegates announced that their countries planned to do so in the near future; some pointed out that their accession would require parliamentary ratification, which would take time. Israel said that while the Agency's 93+2 Programme presented a shift in the attention of the Agency's safeguards system to undeclared facilities, the technical implications of this shift had not yet been satisfactorily resolved and further development was needed, especially concerning capabilities or wide area detection of undeclared facilities. The Conference adopted by consensus a resolution asking, among other things, the Secretariat to implement Part 1 measures of Programme 93+2 without delay as far as available resources permit and requesting the Director General to use the Model Protocol as a standard and to negotiate additional protocols as appropriate with nuclear-weapon states and with other states that are ready to accept the measures contained in it. (**IAEA Press Release** PR 97/22, 24/9; **IAEA Document GC(41)/44**, 2/10, reproduced).

- Many states' interventions dwelt on **the various conventions** that were opened for signature on the first day of the session. The **Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management** (which had been adopted by a diplomatic conference in Vienna, on 5 September) was the subject of some debate, in which India expressed objections to the identification of spent fuel with waste; it saw spent fuel as a valuable resource material on which countries that held this view should not be obliged to report. Other states, including China and New Zealand, objected to the lack of satisfactory provision in the Convention for transboundary movements of radioactive waste. China's attitude was seen in the light of persistent reports that Taiwan is planning to dispose of radioactive waste in the DPRK. The Republic of Korea also expressed itself against 'this irresponsible attempt'. In the end, the General Conference adopted by consensus a resolution (**IAEA Document GC(41)/42**, 2/10, reproduced), welcoming the adoption of the Joint Convention and appealing to all states to become parties. By 1 October, the Joint Convention had been signed by 20 mostly western and eastern European states plus Morocco, the Republic of Korea and the US and including France, Germany, Sweden, Switzerland and the UK. The issue of the safety of transport of radioactive materials was the subject of a separate resolution (**IAEA Document GC(41)/45**, 2/10, not reproduced), referring to the off-site transportation of radioactive waste and spent fuel, especially transboundary movement, and asking the Secretariat to prepare a report on legally binding and non-binding international instruments in this area.

- The **Convention on Nuclear Safety** was dealt with in another consensus resolution (**IAEA Document GC(41)/31**, 1/10, not reproduced) which, in its preamble, referred to the entry into force of the Convention and to the important role of the Agency in acting as a 'driving force' in nuclear safety, and, *inter alia*, asked the Secretariat to provide support for the organisational meeting that will be held on 29

September–2 October 1998 and the first review meeting that is to start on 12 April 1999. Another item discussed under the heading of 'Measures to Strengthen International Co-operation in Nuclear, Radiation and Waste Safety', was the international initiative for the Chernobyl sarcophagus. A resolution on this subject (**IAEA Document GC(41)/36**, 1/10, not reproduced) recalled that the original shelter over the remains of Chernobyl unit-4 was intended to serve only as an interim measure, that a number of industrial countries and the European Union were committed to raise $300 million out of the total cost of $750 million estimated for the Shelter Implementation Plan, and that Ukraine expends nearly 12 per cent of its national budget on dealing with consequences of the Chernobyl accident, among others welcomes the decision of the European Bank for Reconstruction and Development to establish the Chernobyl Shelter Fund and administer the implementation of the Plan, and encourages states to participate in the International Pledging Conference on the Chernobyl Sarcophagus that will be held in New York in November.

- The safeguards situation in the **Democratic People's Republic of Korea**, where the IAEA is still not able to implement its safeguards as appropriate, was a subject in many of the interventions in the general debate. A resolution was adopted which commends the Agency's Secretariat for its work in monitoring the freeze of particular DPRK facilities, urges that country to cooperate fully in the implementation of the safeguards agreement and decides to take the issue up again next year. (**IAEA Document GC(41)/33**, 1/10, reproduced). At the request of China, the draft of the resolution had been submitted to a vote; it was adopted by 77 votes in favour, none against and 11 abstentions, including China.

- The situation in **Iraq** which, as noted by the Director General, quoted above, followed a policy of concealment and obstruction, was the subject of a draft resolution cosponsored by a large group of mostly western states, but also including Arab nations. Iraq had submitted a document refuting some of the allegations of non-cooperation levelled against it. In its statement in the general debate it accused the Agency of tardiness in handling the data that had been submitted and of adding unreasonably to its demands for information. Iraq proposed some changes to the resolution, which would have been more specific in regard to the reference to obstruction of aircraft use, softening language regarding non-provision of information, adding wording that would have implied the early finalisation of the Agency's monitoring work, and omitting reference to the provision of further information and long-term implementation. Each of these proposals was voted upon and rejected; the single vote in favour of all but the last one came from the Russian Federation. In the end, a roll-call vote was held on the resolution in its entirety (unamended); it was carried by 75 votes in favour, none against, and 15 abstentions; the latter included several Muslim nations, China, Cuba, India, Pakistan and Russia. (**IAEA Document GC(41)/INF/20**, 30/9, **GC(41)/35**, 1/10, reproduced)

- As in 1996, a resolution was adopted without a vote, on '**Measures Against Illicit Trafficking in Nuclear Materials and Other Radioactive Sources**'. It welcomes the Secretariat's activities in the fields of prevention, response, training and information exchange and invites the Director General to continue (this work). (**IAEA Document GC(41)/21**; **GC(41)/38**, 1/10, reproduced)

- As in 1996, a group of Arab nations submitted a draft resolution on the application of **IAEA safeguards in the Middle East**, affirming the 'urgent need' for all states in the region to forthwith accept the application of full-scope safeguards to all their nuclear activities and join a mutually and effectively verifiable nuclear-weapon-free zone in the area. As before, the draft, which included a paragraph referring specifically to 'the only state in the region that is not yet a party to the Treaty on the Non-Proliferation of Nuclear Weapons' was discussed at length in the Committee of the Whole and in informal consultations. In the end, agreement was reached on a text that is virtually identical to that contained in last year's resolution and to those of several years before, which did not make specific reference to Israel but underlined 'the importance of the ongoing Middle East peace negotiations'. The resolution (**IAEA Document GC(41)/47**, reproduced) was adopted by consensus, with several Arab states and Iran stating that they had gone along with the consensus with deep resentment at the fact that once again a resolution on the subject had been adopted that was devoid of any new elements and left matters as they had been. As last year, the President read out an agreed statement about the planned expert workshop on the Middle East which, according to a subsequent explanation given from the rostrum, would be held, before the next session of the General Conference.

  As usual, the issue of Israel also figured in the consideration of delegates' credentials. A statement of Arab delegations had expressed reservations about the Israeli credentials, particularly in light of Israel's territorial policies. The report of the General Committee on the credentials was adopted without a vote but with the statement by Egypt, reiterating that its concurrence did not imply any recognition of Israel's boundaries beyond those existing before June 1967; Iran stated that it continued to reject the Israeli regime. (**IAEA Documents GC(41)/29**, 30/9, **GC(41)/41**, 2/10)

- The question of the composition and eventual **extension of the Board of Governors**, which is covered in Article VI of the Agency's Statute, was discussed against the background of various proposals set out in a report by the Secretariat prepared following requests by last year's General Conference. Identical draft resolutions on the subject were submitted by Tunisia, on behalf of the African Group and by Brazil, on behalf of the Group of 77; these drafts contained the actual decision to amend the Agency's Statute in line with previous proposals. In an eventual compromise resolution, adopted by consensus, the Board of Governors instead was asked to develop a process of negotiations among member states and submit a

'finalized formula' for approval at the next session of the General Conference. The issue of the extension of the Board is seen as interlinked with the composition of regional groups, such as specifically Israel's inclusion as a member of the group of Middle Eastern and Asian States. A report of the Chairman of the Board of Governors concluded that there was no agreement on the proposal to include all member states within the appropriate regional areas. This matter, too, is expected to be raised again at next year's General Conference. (**IAEA Documents GC(41)11**, 8/7, **GC(41)/23**, 25/9, **GC(41)/24**, 25/9, **GC(41)/Com.5/14**, 30/9, **GC(41)/Com.5/15**, 1/10, and **GC(41)/46**, reproduced)

By 1 October, the **Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage** had been signed by six states, and the **Convention on Supplementary Compensation for Nuclear Damage** by seven. These instruments had also been the subject of a diplomatic conference which adopted them on 12 September. The former deals with international liability for nuclear damage, including civil liability, international state liability and the relationship between international civil liability and state liability. (**IAEA Newsbriefs**, July/August).

g. Peaceful Nuclear Developments

- In the course of 1998, the Ontario Hydro company, the major utility in the province of Ontario, **Canada**, will shut down seven of the 19 nuclear power reactors operating there, ostensibly for overhaul but mainly, as reported in the media, because bad management has compromised safety at the plants. The reactors (three 815-MW units of the Bruce power plant and four 425-MW units at Pickering A), will be mothballed and brought back on line only if doing so is found to be cost-effective. Ontario Hydro's remaining 12 reactors will eventually also be overhauled. To replace lost operating capacity use will be made of fossil-fuelled facilities. The news has triggered debate in Canada about the virtues and shortcomings of that country's nuclear industry. Canada's Atomic Energy Control Board has reviewed the report which prompted the shut-down of seven reactors and is said to have concluded that in the short run there are no urgent safety problems. It says, however, that significant improvement is needed to avoid further deterioration in performance. Ontario environment officials have given Ontario Hydro one month to report on the consequences of a tritium spill at the Pickering nuclear station (four of whose eight reactors are affected by the closing order) found in 1979, and to explain why this was not immediately reported to authorities. The company has been given 60 days to remedy the situation, which may cause contamination of Lake Ontario, reputedly an important source of drinking water for adjacent cities. Meanwhile, questions are being raised about the future of Ontario Hydro, and previous calls for its privatisation are repeated both in the press and in the legislature. The news that the loss of output of the closed plants will be made up in part by the use of fossil-fuelled facilities is raising concerns in New York State, where it is feared that air quality will be affected. (**Globe and Mail** [Toronto] 13/8; **Nucleonics Week**, 14/8, 21/8, 28/8, 4/9, 2/10; **New York Times**, 14/8; **NucNet News**, 15/8; **Enerpresse**, 18/8; **Reuters**, 11/9)

- **Cuba** and the **Russian Federation** have let it be known that they intend to complete the Juragua Power plant, consisting of two VVER-440 light-water reactors. Construction began in 1983, but was halted in the early 1990s for financial reasons. The US is strongly opposed to the project and Congress is considering measures designed to keep Cuba from completing the station (see **Newsbrief 38**, page 8). Speaking to journalists in New York, the President of Cuba's National Assembly said that US concern about Juragua seemed to be prompted by the Chernobyl accident but was unfounded since the Cuban VVERs were of a type similar to the majority of American power stations. (**Communication from the Permanent Mission of Cuba to the IAEA**, 16/6, in **INFCIRC/537**, 30/7; **NucNet News**, 27/6; **Radio Havana**, 28/6, in **BBC Monitoring Summary of World Broadcasts**, 2/7)

- In the **Czech Republic**, work on completing the 2-VVER-1000 power station at Temelin is continuing, notwithstanding a number of delays and a large cost overrun. Czech sources express the hope that Temelin-1 would start up in 1999, but western expectations are of a possible start-up between 2000 and 2002. The second unit should start 18 months after the first. Czech experts are hopeful that once the station starts operating it will be at least as good as any western power reactor licensed in the 1990s; some western sources, however, foresee the possibility of problems arising from the combination of Russian reactor technology with western safety devices. The US firm Westinghouse, which is involved in the upgrading of the plant to western safety standards, hopes that the experience it gains in the work will enable it to do similar work in Russia and Ukraine. (**Nuclear Engineering International**, August; **Neue Zürcher Zeitung**, 15/8; **Nucleonics Week**, 28/8)

- In **France** there have been further demonstrations against the prospective closure of the Superphenix fast-breeder reactor. Four trade unions have jointly warned Prime Minister Jospin not to close the plant without prior discussion. Mayors of communities in the district of Morestel, where the plant is situated, have called for a reversal of the decision. The chairman of the Japan Atomic Industrial Forum has called on the French government not to shut down Superphenix because its closure would mean a loss of a valuable international asset. Jospin has told the French senate that his government would consult broadly about the matter and that closure would be gradual. President Chirac has called on the Prime Minister to reconsider the implications of closure, which, he said, could affect the entire future of the nuclear programme. France's Minister of Regional Development and Environment has told journalists that the decision is 'irrevocable' and the new Minister of National Education, Research and Technology has made a similar statement. According to a more recent report, however, a formal governmental decision would not be taken until at least mid-October. So far, no decision seems to have been taken as to whether the facility would be closed

immediately or allowed to run for a few more years; there has also been a suggestion that once the maintenance work that is now being done is completed, the facility should be relicensed to operate possibly until 2005 to use up the present core, which is not completely burnt, as well as the second reactor core, which has already been fabricated. However, the latest report indicates that the government still plans early closure and it seems that a number of industries associated with its operation are preparing for a decision of this nature. Meanwhile, the Technology Minister has said he feels it is important to maintain breeder technology and is in favour of restarting the 250-MW prototype breeder reactor Phenix. Phenix has been down since early 1995 for major refurbishing. While no decision has been taken on its restart, pending the settlement of some safety concerns, including its seismic resistance, the likelihood of a positive decision has diminished since France's Institute of Protection and Nuclear Safety has expressed doubts that its core support structures can be inspected periodically.

(**Nucleonics Week**, 3/7, 10/7, 17/7, 24/7, 31/7, 18/9, 2/10; **Le Figaro**, 4/7; **Enerpresse**, 7/7; **Atoms in Japan**, August. See also **Newsbrief** No. 38, page 8)

- Also in **France**, 14 out of the 16 reactors that are licensed to burn mixed-oxide (MOX) fuel assemblies will have loaded a total of 744 such assemblies by the end of the current year. So far, operating performance is said to have been excellent. The utility Electricité de France (EDF) has said that by the year 2000 it hopes to have 28 900-MW reactor units licensed to burn MOX fuel. EDF's 1,300-MW and 1,450-MW power units are apparently not designed for MOX use but specifications for the 1,500-MW European pressurised water reactor include an option to use a 100 per cent MOX core. EDF is expected soon to receive a license to burn MOX fuel containing over five per cent of plutonium; so far it has only been licensed to use fuel with 3.1 per cent plutonium. (Reportedly, France's Environment Minister, Dominique Voynet, will not oppose the extension of MOX fuel use in additional power reactors, although upon its assumption of power, the French government announced that it would call for the phase-out of MOX use.)

  According to a recent study by the OECD Nuclear Energy Agency (NEA), representatives of utilities in Belgium, France, Germany, and Switzerland using MOX fuel are of the opinion that whether MOX is more expensive than LEU is probably less important than the fact that recycling separated plutonium as MOX is currently the only good option for dealing with it.

  (**NuclearFuel**, 14/7, 11/8; **Nucleonics Week**, 11/9)

- At a public information seminar held in Jakarta, **Indonesia**, in July, under the cosponsorship of that country's National Atomic Energy Agency and the IAEA, senior government officials confirmed that their country would need to begin supplementing its depleting fossil energy sources with nuclear energy within ten years. While there was no certain date by which construction of the first nuclear power station in north-central Java would start, senior officials of the National Atomic Energy Agency stated that by the year 2021, ten per cent of electricity in Bali and Java should be supplied by nuclear power. At the same time, the Minister for Industry and Technology announced that the country's nuclear power plans had been indefinitely deferred and that the growing need for electricity of the island of Java would be met initially by natural gas, of which there are said to be large new resources in the South China sea. On the other hand, it is reported that during a recent visit to Russia the minister reached understanding on an agreement with that country on co-operation in the development of Indonesia's nuclear power industry. (**Interfax News Agency** [Moscow], 10/7, in **BBC Monitoring Summary of World Broadcasts**, 18/7; **Indonesia Times**, 15/7; **Jakarta Post**, 15/7, 16/7; **Asahi Shimbun**, 4/8; **Mainichi Shimbun**, 6/8; **Power in Asia**, 11/8, in **UI News Briefing** 97.32)

- There are reports in the Egyptian press that **Israel** is carrying out geological and geographical studies at a site in the Shivta area, near its border with Egypt, preparatory to constructing a nuclear power station there. (**Rose al-Yusuf** [Cairo], 7/7, in **BBC Monitoring Summary of World Broadcasts**, 14/7)

- **Japan**: In June the Japan Atomic Industrial Forum, Inc. (JAIF) submitted to the Science and Technology Agency (STA) a proposal for reform of the Power Reactor & Nuclear Fuel Development Corp. (PNC), and made recommendations for the future of Japan's nuclear-related research and development (R&D). JAIF pointed out that the fire and explosion at the bituminisation facility of PNC's Tokai reprocessing plant had not adversely affected the environment or caused injuries to people. However, PNC's handling of the situation had raised concerns and intensified distrust of nuclear development. It was also to be regretted, according to JAIF, that PNC had failed to learn from the Monju accident and had repeated previous mistakes.

  The Liberal Democratic Party (LDP) of Japan, which is the biggest member of the coalition which forms that country's government, has proposed the shut-down by the end of the century of the prototype advanced thermal reactor Fugen, which is operated by PNC. Like JAIF, the LDP has proposed converting PNC into a private company. PNC would cease its overseas uranium exploration efforts and would no longer be engaged in uranium enrichment work. On the other hand, the proposal would have PNC's successor company continue the reprocessing work at Tokai until the larger reprocessing plant at Rokkasho starts operations; the scheduled date for this event is 2003.

  A Reform Study Council set up by STA has come to similar conclusions. This body, representative of Japan's nuclear research and utilities, and comprising senior officials of STA and of PNC, has concluded that the company gave too much weight to R&D and neglected such important areas as safety, maintenance and crisis management; PNC was also accused of lacking openness and being reluctant to adjust to changing circumstances. Further, the organisation was seen as having become too big and therefore difficult to control, neglecting to keep the budget down and lacking efficiency. The report was sharply critical of

PNC's management structure and called for drastic reforms. On 1 August, the Chairman of the Japanese Atomic Energy Commission, who is also the head of STA, ordered the dissolution of PNC and its replacement by a new organisation with fewer projects but broader authority. PNC is to cease its uranium exploration efforts overseas, stop its work on high-performance centrifuges for uranium enrichment (a technology which is not considered cost effective) and scrap the Fugen reactor. PNC's spent fuel reprocessing work at Tokai is to continue until the larger privately owned reprocessing plant at Rokkasho-Mura is commissioned. PNC's successor organisation will be responsible for developing the prototype fast-breeder reactor Monju and the research fast reactor Joyo. It will also carry out research on fuel for fast-breeder reactors and fabricate it and be responsible for R&D on reprocessing of FBR spent fuel. In a move that is seen as 'exile', PNC's head office has been relocated from Tokyo to Tokai. Also, STA has greatly reduced the funds to be allocated for PNC's 1998 operations.

After the announcement of these changes PNC incurred still further criticism as a result of the disclosure that its officials failed to take adequate action to prevent rainwater entering storage pits containing thousands of drums with low-level radioactive waste at Tokai storage facilities. Reportedly, they had known about this for many years (initial reports mention the year 1982 but it has now been revealed that the problem goes back to 1971) and had received funds to build a temporary storage facility for the drums and repair the pits. It now appears that the funds were used for other purposes and action was postponed until a new waste disposal facility would be ready. The health and safety consequences of the leak are said to be negligible. In September STA launched an inspection of all PNC sites, following the disclosure of a series of minor violations in handling low-level waste at a number of other facilities.

A Japanese court has levied fines against PNC and two of its senior officials for knowingly submitting false reports to the government regarding the sodium leak accident at the Monju fast breeder reactor, in December 1995. The STA is preparing for additional administrative penalties to be leveled at PNC. PNC has announced that it is taking punitive action against 24 of its officials involved in the cover-up, including a vice president. The Toshiba Corporation, manufacturers of the thermometre that caused the sodium leak at Monju will pay a fine of ¥4 million and, together with PNC, will pay for the investigation of the event and repairs at the facility.

Japan's Prime Minister has rejected a bid by STA to be upgraded to full ministerial status, reputedly because of its inadequate supervision of PNC's performance.

(**Plutonium** [Tokyo], Summer; **SpentFUEL**, 14/6, 28/7, 4/8, 1/9; **Chamber World Network International Ltd.**, in **Asiaweek**, 30/6; **Atoms in Japan**, July, August, September; **Nucleonics Week**, 3/7, 24/7, 7/8, 21/8, 28/8, 4/9, 11/9, 18/9; **Asahi Shimbun**, 18/7; **Jiji Press Newswire**, 18/7, 19/8; **Mainichi Shimbun**, 18/7; **Yomiuri Shimbun**, 18/7; **Financial Times**, 29/8; **Reuters**, 11/9. See also **Newsbrief** No. 38, pages 9 and 10.)

- The Ministry of Atomic Energy (Minatom) of **Russia** has announced that decommissioning of the country's 18 oldest reactors will be put off from 2003–2005, as earlier envisaged, to 2010. One reason is said to be the lack of financing needed to ensure the timely completion of replacement units. (**Nucleonics Week**, 25/9, 2/10)

- The two first generation VVER-440 model 230 power reactors at the Bohunice nuclear power station in the **Slovak Republic** have been upgraded. As a result of backfitting done since 1991 and planned to be completed in 1999, local officials say that the plant should be able in principle to operate until the year 2010. There are reports that the utility hopes to keep it going well beyond the year 2000, possibly until 2005, when the two Mochovce VVER-440 model 213 units should be on-line. Apparently, during a visit to Austria earlier this year, Prime Minister Meciar said that the two reactors would be closed down by 2000, even though, reportedly, that commitment is no longer required to obtain financing for the completion of the Mochovce station, for which funding has meanwhile been found. (**Nucleonics Week**, 7/8)

- The decision of the government of **Sweden** to shut down the two nuclear power reactors at Barsebäck by 1 July 1998 and mid-2001, and subsequently decommission the country's remaining nuclear reactors, continues to be criticised in the Swedish press and in newspapers throughout Europe. In Sweden itself a new report charges that the choice of Barsebäck as the first station to be closed down was inspired by the government's wish to protect a state-owned nuclear station. The report also claims that the proposed law on decommissioning is defective and will give Sydkraft AB, the company that owns Barsebäck, leverage to demand disproportionate compensation. The state-owned utility Vattenfall says that the decommissioning of Barsebäck will have little effect on electricity prices.

  A proposal has been launched to compensate for the 1,200 megawatts reduction in power production that will result from the shut-down of Barsebäck by forcing industry to use less energy. Under the scheme, proposed by a member of the Swedish Left party, the 100 most energy-intensive industries in the country would have to pay a premium for any power they use in excess of a norm to be set for them by the National Licensing Board for Environmental Protection. The idea is expected to be introduced into the Swedish Parliament when that reconvenes in October.

  The government official who drew up the political agreement on early reactor decommissioning has been chosen as the new head of the waste management firm SKB.

  (**Nucleonics Week**, 24/7, 7/8, 21/8, 11/9, 2/10; **NuclearFuel**, 28/7)

- **Thailand** is setting up a new nuclear research centre. The US firm General Atomics has been given a $133

million contract to design and build the centre, at Ongkharak, 60 km north of Bangkok. It will have a 10-MW TRIGA Mark III reactor to be used for research and isotope production. Part of the centre's function reportedly is to lay the foundations for a nuclear power programme. So far, no firm time scale seems to have been adopted for a nuclear power programme and the final decision may depend on the outcome of Thailand's current monetary problems. A decision in principle to construct a power reactor was taken in 1989 and electric consumption is said to be increasing at the rate of ten per cent a year. There are unconfirmed press reports that an international consortium comprising several Japanese firms and General Atomics may already have received an order to build a nuclear power plant in Thailand. (**General Atomics Press Release**, 20/6; **NucNet News**, 27/6; **South China Morning Post**, 28/6; **Enerpresse**, 30/6; **IAEA Annual Report for 1996**)

- The government of **Ukraine** has decreed that the Chernobyl-1 reactor unit, which is currently down, will be decommissioned without first being restarted. Chernobyl-3, which remains as the only operational reactor at the station, was shut down for repairs on 21 July and is not expected to be on-line until December, given a dearth of spare parts and equipment. Ukrainian nuclear officials are quoted as saying that once the necessary maintenance has been completed, the unit should be capable of operating for another ten years. The European Bank for Reconstruction & Development (EBRD) has remained seized of the question whether the completion of the two VVER-1000 power reactor units Khmelnitski-2 and Rovno-4 would present a least-cost option in Ukraine's search for alternative energy sources. Reportedly, expert analyses of the issue have come to contradictory conclusions. Ukraine's Minister of Environmental Protection and Nuclear Safety, Kostenko, has warned that if the EBRD refuses to give credit for the completion of Khmelnitski-2 and Rovno-4, the commitment to close Chernobyl altogether by the year 2000 may have to be reconsidered.

  The situation is apparently complicated by the fact that a peer review made by the World Association of Nuclear Operators (WANO), which has concluded that deficiencies at Chernobyl-3 have resulted in a decrease in the level of nuclear safety, is refuted by Ukrainian experts. The latter reportedly reject the WANO report as a misjudgment and have alleged that its circulation to western governments, before the Ukrainian side had a chance of reacting, is intended to increase pressure to close the station down without full financing for the completion of Khmelnitski-2 and Rovno-4. An unscheduled inspection by Ukraine's nuclear safety inspectorate is said to show that all safety requirements are being implemented, but it agrees with the WANO findings that management at the plant is deficient.

  Environment Minister Kostenko has also expressed doubt about the feasibility of the G-7's approach to obtaining an additional $400 million for the reconstruction of the shelter over Chernobyl-4, in addition to the $300 million previously pledged by the G-7 and the $150 million it wishes Ukraine to contribute.

  (**Nucleonics Week**, 3/7, 10/7, 31/7, 18/9, 25/9, 2/10; **UNIAN News Agency** [Kiev], 21/7, in **BBC Monitoring Summary of World Broadcasts**, 25/7. See also PPNN **Newsbrief** No. 38, page 11.)

h. Nuclear Policies and Related Developments in Nuclear-Weapon States

- Reports have surfaced once again, that in 1995 **Russia** prepared to launch a nuclear strike in retaliation for a nuclear attack it mistakenly thought was underway. The Russian response is said to have been triggered by the launch of a research rocket from a Norwegian Arctic island of Andoya, that was used for a study of the Northern Lights. (**New York Times**, 6/7)

- Also in **Russia** the Chairman of the Defence Committee of the State Duma, retired General Lev Rokhlin, has warned that the country's nuclear forces are deteriorating fast in terms of command-and-control, readiness and reliability. (**International Herald Tribune**, 27/6)

- The cause of the criticality accident that occurred in the nuclear-weapon research facility at Arzamas-16, in **Russia**, in which a senior researcher received a lethal dose of radiation, was found to have been human error. Reputedly, the researcher in question used incorrect data on the size of a critical assembly and failed to install a neutron source in its core; he also violated rules by working alone and, allegedly, rushing the experiment to finish it on a Friday evening. In addition, faults were found in the construction of the installation and in the nuclear safety system.

  It is now known that several months earlier a spontaneous critical reaction occurred at the Novosibirsk chemical concentrates plant (NEChK), where HEU is processed. The accident apparently did not cause injuries or deaths.

  (**ITAR-TASS**, 1/7, in **BBC Monitoring Summary of World Broadcasts**, 2/7; **Nucleonics Week**, 3/7, 10/7; **NuclearFuel**, 6/10. See also **Newsbrief** No. 38, page 11.)

- According to a report by the Natural Resources Defense Council (NRDC) called *End Run: The US Government's Plan for Designing Nuclear Weapons and Simulating Nuclear Explosions Under the Comprehensive Test Ban Treaty*, a recently declassified Department of Energy (DoE) document reveals that as part of the Stockpile Stewardship and Management Program (SSMP), the **United States** is developing designs for new nuclear weapons and modifying existing ones. According to the DoE document, work is underway on upgrading and replacing a range of thermonuclear weapons, including the B-61 gravity bomb; the W-87 warhead for MX missiles; and the W-76 and W-88 warheads for submarine-launched Trident missiles. The news is strongly criticised by arms control advocates who see it as both being in contradiction to the Comprehensive Test Ban Treaty (CTBT) and as contravening article VI of the Non-Proliferation Treaty (NPT). The NRDC claims that the US is planning to expand its base of nuclear weapons knowledge through the use of experimental facilities

for nuclear weapons physics and underground high explosive experiments with plutonium and other nuclear materials; that it will develop three-dimensional computer simulations of nuclear weapons performance which will give it a 'virtual testing capability'; that it is developing and integrating into existing weapons a variety of improved components; and that it plans to rebuild weapons with modified nuclear component. The report, which is said to be an interim product in NRDC's work of exploring the full implications of the SSMP, also claims that the US plans to design, simulate and flight-test weapon prototypes as possible replacements for existing weapons.

DoE officials deny that they are making new weapons and insist they are only modernising old designs, but the NRDC says that some of DoE's efforts are meant to increase the power and precision of weapons and to strengthen them for jobs like deep penetration.

The American military are planning to test-fire a laser beam into space at an air force satellite. Reportedly, the test is meant to generate data that could help in planning measures for the protection of US satellites. The strength of the laser, called MIRACL, for mid-infrared advanced chemical laser, is said to be in the 'mega-watt class', i.e., more than a million watts of power; its exact strength is a military secret. Reports from the US Department of Defense confirmed in early October that the test was imminent. Arms control experts have warned repeatedly that the experiment may set off a race for new space weapons. A Congressional prohibition on such test firings expired in 1995.

(**New York Times**, 18/8, 1/9; **Guardian**, 19/8; **Direct Information**; **International Herald Tribune**, 3/10. See also **Newsbrief** No. 38, pages 11 and 12)

- In August it was announced in the **United States** that DoE had decided to use a commercial light-water reactor for a 'confirmatory test' to prove that making tritium for nuclear weapons in such a reactor is technically straight-forward and safe. The facility to be used for this purpose would be the Watts Bar plant of the Tennessee Valley Authority, which was to close for refuelling in September and would then load the four special rods to be used in the experiment. Critics attack the plan as being contrary to US non-proliferation policies and setting a negative example to other states. Just previously there had been a report that DoE is still considering restarting its Fast-Flux Test Facility at the Hanford nuclear reservation in Washington State for the purpose of producing tritium. This facility has been in hot standby since the Hanford site was shut down in 1989 for clean-up.

  The American nuclear trade journal *Nucleonics Week* reported in late September that Russia might be willing to supply the US with the tritium it needs to maintain its nuclear weapons.

  Since its shut-down in the 1970s, the Hanford nuclear reservation is said to have accumulated 450 billion gallons of liquid waste and generated 200 square miles of contaminated groundwater. The area contains 11 idled reactors and although a clean-up programme has been underway for almost ten years, there is said to be an increasing danger of chemical explosions in waste storage facilities. Such an explosion is now known to have taken place on 14 May in a 400 gallon storage tank, which caused plutonium-contaminated water to be deposited outside the facility. The event, reportedly due to a long-time failure to conduct regular inspections of the installation, is said to point to serious short-comings in emergency measures at the site. The event has triggered an order from the Secretary for Energy that DoE sites should take immediate steps to improve the handling of emergencies and protection of worker safety.

  The Rocky Flats nuclear weapons plant in Colorado has been selected for an accelerated clean-up programme. Until 1989, the plant manufactured plutonium triggers for nuclear weapons.

  (**Guardian**, 28/7, 29/7; **Reuters**, 28/7; **New York Times**, 9/8, 11/8, 28/9, 29/9; **Nucleonics Week**, 4/9. See also **Newsbrief** No. 38, page 13.)

i. Proliferation-Related Developments

- Agreement has been reached between the **Democratic People's Republic of Korea** (DPRK) and the Korean Peninsula Energy Development Organization (KEDO) on a number of 'pre-construction protocols'. As a result, in August it was possible to begin site-preparation work at Kumpo, where the two light-water power reactors will be situated which KEDO is to supply to the DPRK. KEDO has opened a local liaison office at the site. A formal ground-breaking ceremony was held on 19 August, among representatives of the DPRK and about 50 persons from KEDO member states. South Korea has announced it will provide $45 million to enable construction to begin. The first shipment of a total of 9,000 tons of materials and heavy construction equipment arrived in late July. Reportedly, the Korea Electric Power Corporation (KEPCO), which is the prime contractor for the reactors, has let a contract to the DPRK to build a road between the port of Sinpo and the Kumbo site. Total construction cost is now estimated by KEPCO to exceed $5 billion against an original estimate of $4.3 billion. Of this, the Republic of Korea and Japan were initially expected to contribute 90 per cent, with Japan's share amounting to $1 billion but these figures are said to be subject to change. Construction of the reactors is due to begin in two years and should be completed around the year 2007, although the original plans call for completion in the year 2003. Energy experts in South Korea warn that the North's electric grid may be too small and outdated to handle the output of the two reactors once they are completed; upgrading of the relevant infrastructure is seen as unavoidable and would require additional expenses, which the DPRK could probably not afford.

  At an ASEAN meeting held in Singapore in late July, the US Secretary of State called on members states of that organisation to give greater financial support to KEDO, which was 'integral to stability on the Korean Peninsula'. Reportedly, the US hopes that ASEAN will be able to contribute a total of $30 million over five

years. It has since also been announced that the European Union has now formally joined KEDO as a member of its Executive Council and will contribute $70 million a year for the next five years.

After lengthy preliminary discussions between senior delegations from the two Koreas and the US, it was reported in early July that the DPRK had at last consented to meet with American, Chinese and South Korean officials for preparatory talks to discuss the possibility of holding four-power peace negotiations at a meeting starting on 5 August, mainly to discuss procedural matters. At the time there were reports that the DPRK had dropped its earlier demands for massive food aid, for the exclusion of the South from any negotiations, and for an end to economic sanctions. The meeting took place at Columbia University in New York City, and was attended by the US Principal Deputy Assistant Secretary for East Asian and Pacific Affairs, the Deputy Foreign Minister for Political Affairs of South Korea, a Vice-Foreign Minister from the DPRK and a Chinese Assistant Foreign Minister.

When the meeting started, there was a report that Pyongyang would be ready to abide by the terms of the 1953 armistice agreement, which would have constituted a reversal of the policy it proclaimed in 1995. At that point expectations of success were relatively high, particularly because of China's participation and the impression created by the North that it saw peace negotiations as conducive to obtaining more food assistance. However, at the end of the third day the talks were broken off, reportedly as a result of disagreement over the agenda. The DPRK was said to insist on the inclusion of the issue of the withdrawal of the 37,000 US troops stationed in the South, and once again expressed its wish to conclude a separate peace with the US. It also called for the cancellation of the South Korean/US war games that were to be held shortly after and it did come back to its earlier demand that substantial food aid should be provided before formal four-nation talks could take place. Tentative agreement was reached only on some procedural matters, including the decision in principle that formal negotiations would start six weeks after the end of the preliminary talks and that they would be held in Geneva, Kuala Lumpur, New York or Singapore. Further preliminary talks were scheduled for mid-September. At the same time, however, an official speaker in Pyongyang was quoted as saying that the DPRK did not wish to negotiate with South Korea until after the presidential elections of January 1998.

In late August, news came that the DPRK's ambassador to Egypt and his brother, Pyongyang's trade representative in Paris, had defected and been granted political asylum in the US. The ambassador was said to have been familiar with his government's supply of missiles to countries in the Middle East. The DPRK denounced the two men as criminals who were facing charges of having leaked state secrets, and expressed anger at the US's decision to grant them asylum. Consequently, it refused to participate in the third round of talks about missile proliferation that were to have been held in New York just then.

The incident raised concern about the future of the four-party peace talks, but in meetings in Pyongyang in early September, senior American officials were said to have prevailed upon their DPRK counterparts not to let the defection issue stand in the way of the September round of preliminary talks. These talks were resumed in New York on 17 September but were adjourned two days later without agreement having been reached. Reportedly, once again, the DPRK insisted on a direct linkage between food assistance and the peace negotiations. It also demanded the inclusion as an agenda item of the withdrawal of US troops from the South and called for a separate peace treaty with the US. A US spokesman accused the DPRK of inflexibility and of not attempting to find common ground. No further preliminary talks were scheduled.

All the while, the food situation in the DPRK has been steadily worsening. Where initially it was caused by heavy rains and devastating floods, it is currently said to be aggravated by a drought which has caused 70 per cent of this year's corn crop to be lost, and a tidal wave that hit the coast in August and is said to have destroyed another 700,000 tons of corn. The inclement weather now reportedly affects agriculture in the entire country and will have an impact on next year's harvest as well. There is a report by an international private relief organisation based in the US, World Vision, that up to 15 per cent of the population in the North may be dying of starvation and famine-related diseases. German Red Cross speaks of a mortality rate for children under seven of 40 per cent. International experts in the field, while doubting the credibility of such dramatic numbers, agree that the situation is worsening, but after a series of appeals for international support, the UN's World Food Program (WFP) announced in late September that out of the reported shortfall of 800,000 metric tons of food, 750 tons had been obtained from a variety of sources and that this would suffice to meet needs until the October harvest. Some of this reportedly came from the Republic of Korea which in an apparent change of policy announced in mid-August that it would make a sizeable contribution. The US also disclosed that it would donate a large quantity of surplus grain although, given the old animosities between the two countries, there is considerable resistance among the American public and the legislature to such moves. A group of American members of Congress who recently visited the North and were not permitted to see at first hand the distribution of food from foreign sources, reported their impression that some of the food might have been diverted to the military; there were calls in the Congress to suspend food aid until assurances could be obtained that this was distributed fairly.

At the same time there were reports that in the US long-term preparations were being made for large-scale international relief operations that would be put into motion if the situation assumed international crisis proportions. Speculations in the US press that the famine might bring the DPRK's regime to the point of collapse were fed by the report that against expectation, on 3 July, the third anniversary of the death of the DPRK's late leader Kim Il Sung and the end of the official mourning period, his son, Kim Jong Il, did not

assume the formal title of leader of the country. However, in September it was announced that Kim Jong Il had been endorsed by the country's armed forces as General Secretary of the Workers Party and would soon be formally named to that post.

In a press conference in Seoul, Hwang Jang Yop, the former senior government advisor who defected to the South and who had claimed that the DPRK had enough chemical and nuclear weapons to annihilate its southern neighbour, conceded that he did not have proof that the North had nuclear weapons. Quoted as saying that, not being a weapons expert, he did not know exactly what types of weapons the DPRK possessed, Hwang claimed that the existence of such weapons was common knowledge in the North, and South Korea would be wise to assume that they exist.

According to a report from Seoul, procedures have been started in Taiwan to obtain a permit for the transfer of nuclear waste to the DPRK. Taiwan nuclear authorities have said they must inspect the site, at Pyongsan, about 100 km from Seoul, before a decision can be taken, but no date has so far been set.

(**Safe Energy Journal**, June-August; **International Herald Tribune**, 26/6, 3/7, 6/8, 7/8, 8/8, 9/8, 1/10; **Wall Street Journal**, 26/6, 2/7; **Korea Herald** [Seoul], 28/6, 15/7, 13/8; **Die Welt**, 30/6; **Jiji Press**, 1/7; **New York Times**, 1/7, 9/7, 11/7, 15/7, 6/8, 8/8, 10/8, 14/8, 20/8, 23/8, 26/8, 27/8, 28/8, 29/8, 2/9, 11/9, 12/9, 15/9, 22/9; **Washington Post**, 1/7, 6/8; **Yonhap** [Seoul], 1/7 and 3/8, in **BBC Monitoring Summary of World Broadcasts**, 3/7 and 4/8, respectively; **Associated Press**, 3/7, 6/8, 13/8, 25/8; **Neue Zürcher Zeitung**, 3/7, 29/7; **Reuters**, 3/7, 14/7, 28/7, 29/7, 30/7, 13/8, 25/8; **NAPSNet Daily Report**, 29/7, 31/7, 1/8, 13/8, 18/8, 25/8, 16/9, 24/9; **Sankei Shimbun**, 29/7; **Korea Times**, 6/8; **Chosun Ilbo** [Seoul], 8/13; **Frankfurter Allgemeine Zeitung**, 20/8; **Economist**, 23/8; **Nucleonics Week**, 28/8; **Washington Post National Weekly Edition**, 1/9. See also **Newsbrief 38**, pages 13 and 4.)

- In an article in the *Economic Times* of **India**, the prominent security expert K. Subrahmanyam quotes a senior Indian general as saying that the country follows a policy of minimum nuclear deterrence and keeps its options open with the ability to make the nuclear option operational in a short time after it receives a first strike. The policy is further described as one of no-first use and guaranteed nuclear retaliation 'hours after India is hit'.

  Following the meeting in the Maldive Islands between the Prime Ministers of India and Pakistan (see **Newsbrief 38**, page 15), the foreign secretaries of the two countries have agreed to set up working groups on a range of issues, including Kashmir. Agreement by India on the creation of a venue for the discussion of Kashmir is seen as significant as New Delhi has always taken the position that Kashmir was part of India and was not a subject of dispute. On 22 September, at the UN General Assembly, Pakistan's Prime Minister proposed the conclusion of a non-aggression pact with India and suggested the posting of UN observers to monitor India's border with Kashmir.

(**Daily Telegraph**, 24/6; **Economic Times**, 27/6; **Economist**, 28/6; **New York Times**, 23/9)

- According to General Binford Peay, commander of US forces in the Persian Gulf area, **Iran** is closer to developing nuclear weapons than was previously thought and could be a nuclear power by the turn of the century. It is not clear whether this is the general's own view or that of the US Department of Defense or the Central Intelligence Agency. According to a report in the English newspaper *The Observer*, Iran has tried to obtain a British-made mass spectrometer, which it intended to use in its nuclear weapons programme. The newspaper also claimed Iran was five years away from owning nuclear weapons. The President of the company producing the spectrometer has said that it is dual-use off-the-shelf equipment and that no export permit has been applied for in connection with a shipment of the instrument to Iran.

  According to the British monthly *International Defence Review*, published by Jane's, in early 1996 the Iranian Deputy Minister of Atomic Affairs approached South Africa's Atomic Energy Corporation, seeking to buy blueprints, industrial, chemical and laboratory equipment and other items required for the production of nuclear weapons. Reportedly, the request was denied. The journal quotes South African defence force officials as alleging that an undisclosed number of technicians made redundant after South Africa's nuclear weapon programme was closed down, are now working in Iran.

  The commander of Iran's Revolutionary Guards, General Mohsen Resaie, has said that his country has no desire to acquire 'banned weapons such as nuclear bombs or chemical weapons'. According to the Israeli daily *Ma'ariv*, as quoted in the European press, Israel's Defence Minister has said that his country would take any step necessary to make sure that Iran would never possess a nuclear weapon. An Egyptian weekly has reported that according to a European source, Israel plans to attack the Russian-built reactors 'at the appropriate time'.

  In late July, IAEA Director General Blix visited two new research centres, one now being developed at Ramsar, near the Caspian Sea, and one that is said to be completed, at Bonab, in west Azarbaijan. Reportedly, Blix had asked to see the two centres because the IAEA knows little about activities there. As there apparently is no nuclear material in process or storage at either site, no IAEA safeguards apply. Dr. Blix also visited a medical isotope production centre at Karaj.

  (**Rose al-Yusuf** [Cairo weekly], in **BBC Monitoring Summary of World Broadcasts**, 10/6; **Times** [London], 27/6, 16/8; **Reuters**, 29/6; **Nucleonics Week**, 24/7, 7/8; **Die Presse**, 24/7; **NuclearFuel**, 8/9. See also under section **j. Illicit Nuclear Trafficking**, page 19)

- US officials have raised doubts about the truth of a report from **Pakistan** that the 50–70-MW (thermal) natural-uranium reactor being built near Khushab, reportedly with Chinese assistance, had started operating. Until recently, Pakistani official sources

denied the existence of the reactor altogether, but now they claim that it is intended for isotope and power production. However, the absence at the site of power grid infrastructure, combined with unconfirmed suggestions that a fuel fabrication or reprocessing facility is under construction nearby, has led to speculation that the main purpose is to produce plutonium. The reactor is not under international safeguards. Reports that it is unable to operate for lack of heavy water (experts are quoted as saying that a full inventory would be 15–20 tonnes, but that criticality can be achieved with a smaller amount) are gainsaid by an Indian report that in 1996 China supplied Pakistan with 40 tonnes of this material. American inquiries into this matter have brought the assurance from Beijing that China has not sold Pakistan heavy water for Khushab. China does provide heavy water for use in the Kanupp reactor station at Karachi, which is under IAEA safeguards. In August, there were reports of American efforts to persuade Pakistan not to start up the reactor without IAEA safeguards because it does not have the capacity to extract the plutonium from irradiated fuel in any case. An auxiliary building near the site of the reactor was originally feared to be a reprocessing plant but is now thought not to be.

India has repeated its accusation that China is helping Pakistan develop nuclear warheads for its medium-range missiles.

(**Nucleonics Week**, 3/7, 14/8; **Reuters**, 14/8. See also above, under item **e. Nuclear Trade and International Co-operation**, page 6–7 and **Newsbrief** No. 38, page 16)

j. Nuclear Material Trafficking and Physical Security

- There are renewed allegations in **Germany** that the illicit import of 360 grammes of plutonium from Russia in 1994 took place with the knowledge of German authorities. Charges to this effect have been made by the judge who, in 1995, convicted the smugglers. Apparently, prosecutors had agreed to ask for lenient sentences on condition that the smugglers withhold evidence that would incriminate government officials. The matter is once again under investigation. (**Nucleonics Week**, 17/7; See also **Newsbrief** No. 37, page 11 and No. 38, page 17.)

- Also in **Germany**, a suspect in an ongoing investigation is said to have offered nuclear warheads for sale to third parties, including a procurement agent for Iran. Reportedly, German official investigators have confirmed that a businessman from Hanover had discussed the possible sale of a range of Soviet military equipment, including nuclear warheads; the warheads were supposed to have fetched a price of $5 million. (**Nucleonics Week**, 28/8)

- **Iraq**: Two American citizens, accused in 1996 of trying to export zirconium to Iraq, have been acquitted in a federal court because the prosecution was unable to prove that they knew its destination. Allegedly the material originated from Ukraine and had been smuggled to the US with the help of a Russian general. (**New York Times**, 16/7)

- Security officials in **Lithuania** reported in early June that they had seized 70 kg (154 lbs) of 'radioactive uranium' that was part of a total of 100 kg uranium fuel stolen from the Ignalina power reactor in 1992. One lot, of 20 kg (44 lbs) was said to have been secured near Ignalina, and 50 kg near Vilnius. The remaining uranium is thought to have been sold. In some news reports the quantities seized are given as 60 kg and 30 kg, respectively. The perpetrators, who confessed, were former employees at Ignalina. (**Reuters**, 12/6; **Die Presse**, 13/6; **Süddeutsche Zeitung**, 13/6)

- In an interview with the 'Sixty Minutes' CBS TV News Programme **Russia**'s former national security advisor, General Alexandr Lebed has alleged that up to 100 suitcase-size nuclear explosive devices are missing from the country's arsenals. Lebed reportedly told a delegation from the US Congress in May that he believed 84 of the devices, each with a yield of one kiloton, were unaccounted for, out of a total inventory of 132. In the later interview with CBS, he raised the number to 100 out of a supposed total of 250. He added that he did not know where they were, whether they had been destroyed or were stored, or had been sold or stolen. Spokesmen for the President and for the cabinet have emphatically denied the allegation; Defence Minister Sergejev has repeatedly stated that the entire Russian nuclear arsenal was under the strict control of his department. International experts similarly consider Gen. Lebed's claim as extremely unlikely. Lt. Gen Igor Volynkin, the head of the defence ministry's security department, has denied that no 'nuclear suitcases' were ever produced or are now being produced; although this would be possible technically, he said, such small weapons would have a lifespan of only a few months, after which they would have to be dismantled, which would make them too costly to maintain. He did say that Russia had nuclear mines, which were somewhat larger than a suitcase and could be carried by a truck. Nevertheless, Lebed has since reiterated his assertion, now raising the number of missing devices to 'over one hundred'. This has also been taken up by a former presidential adviser for environmental matters, Jablokov, who has suggested that the defence ministry may not be aware of the existence of these small weapons which, he claims, were produced in the 1970s for the KGB, for use in terrorist actions. It has also been noted that the United States has built more than 300 special demolition munitions which were so small that they were called 'backpack nukes'; they weighed 163 lbs and were kept in relatively small packing cases. They had a yield of 0.1 kiloton and were meant to be detonated behind enemy lines. (**Reuters**, 5/9; **'Sixty Minutes' CBS TV Programme**, [USA], 7/9; **Washington Post**, 8/9; **International Herald Tribune**, 26/9, 27-28/9; **Die Presse**, 26/9; **Henry L. Stimson Center on the Internet**, 8/10)

- In Miami, on 30 June, **United States** law enforcement officials arrested two Lithuanian nationals (some reports speak of 'Russian mobsters from Lithuania') who offered a variety of munitions, missiles and weapons for sale, including, allegedly, tactical nuclear weapons. The arrests followed a two-year long sting operation in which US federal officials pretended to

seek nuclear weapons for Colombian drug dealers [*sic*]. While US customs officials point to the event as indicative that there are indeed criminal elements dealing in strategic weapons, Lithuanian police speak of a swindle committed by two small-scale criminals. The matter is under investigation. (**Canada Financial Post**, 1/7; **New York Times**, 1/7; **Reuters**, 2/7; **Süddeutsche Zeitung**, 2/7; see also PPNN **Newsbrief** No. 30, page 18)

- Also in the **United States**, an opinion poll has found that the majority of Americans find the prospect of terrorism against the US by terrorists smuggling nuclear weapons into the country as the most likely and the most frightening outcome of having nuclear weapons in the post-Cold War world. The poll was carried out under the auspices of the Henry L. Stimson Center. In testimony before the House of Representatives, the Director of the Federal Bureau of Investigation (FBI) has claimed that the possibility that nuclear weapons could fall into the hands of a Russian outlaw group is being taken very seriously by American law enforcement agencies. However, Mr. Freeh, the FBI Director, is quoted in media as saying he has not found evidence of so-called 'nuclear suitcases' missing from Russia's nuclear arsenal. On the other hand a report by a panel of experts with the Center for Strategic and International Studies states that the growth of Russian organised crime operating world-wide has increased the risk of the sale of nuclear weapons material for terrorist purposes. (**Henry L. Stimson Center on the Internet**, 25/9, 2/10; **International Herald Tribune**, 3/10; **ABC News on the Internet**, 3/10. See also above, item on Russia.)

k. Environmental Issues

- A report by two French public health specialists published in the *British Medical Journal* last January triggered concern that a cluster of cases of leukemia among young people living in the vicinity of Cap La Hague, in Normandy, **France**, may be related to discharges of low-level radioactive waste from Cogema's nuclear fuel reprocessing facility there. An epidemiological study made by a government-appointed nuclear safety commission has denied the existence of evidence of a cause-and-effect relationship between the plant and the risk of leukemia in the local population, notwithstanding heavy use of the beaches. The French Office for Protection against Ionizing Radiation (OPRI) has determined that local beaches and seafood obtained in the area are safe and the average annual dose from operations at La Hague remains well below limits set by the European Union. Nevertheless, the Minister for the Environment has restricted access to the area directly adjacent to the discharge pipe, for 'precautionary reasons'. The French Ministry of Health, on the other hand, has since said that a prohibition on fishing and water sports in the immediate area until the end of the summer season was not scientifically warranted; many experts felt that a more limited ban on activity within 50 metres of the principal waste pipe would have been sufficient to protect human health. More recently, the pipe was cleaned and as a result, the radioactive discharge, measured by Greenpeace in March of this year, is said to have been reduced by a factor of 30. However, Greenpeace has now accused Cogema of having polluted the marine environment by flushing 50 kgs of radioactive salt from the pipe and the company has been faulted by French environmental authorities on not having given them timely notification of the action. Greenpeace has announced that,following the rejection by a French court of law of Cogema's call for a restraining order, it will continue taking samples around the outlet. There are rumours that the oil and gas industry is supporting environmentalists campaigning against Cogema's reprocessing activities at Cap La Hague. The controversy is said to have had a 'catastrophic' impact on the area's reputation and on tourism, not only in France but also the Channel Islands. (**NucNet News**, 8/7, 17/7; **Guardian**, 11/7; **Libération**, 11/7; **El Pais**, 11/7; **Standard** [Vienna], 11/7; **Reuters**, 16/7, 23/7; **Nucleonics Week**, 17/7, 24/7; **Neue Zürcher Zeitung**, 18/7; **New York Times**, 3/8; **International Herald Tribune**, 7/8; **NuclearFuel**, 8/9, 22/9)

- **Germany**: A shipment of nuclear waste to a storage facility at Ahaus, in the *Land* [region] of North Rhine-Westphalia, is expected to lead to anti-nuclear demonstrations similar to those that took place in protest to the transport of spent fuel and high-level nuclear waste to an interim storage facility at Gorleben. The cabinet and parliamentary leaders of North Rhine-Westphalia have already announced they oppose the shipment, and its Minister of Economics has said that if industry goes ahead with the transport, there will be 'a second Gorleben'. (**Nucleonics Week**, 17/7, 24/7. See also PPNN **Newsbrief** No. 34, p. 6.)

- The *Pacific Pintail*, carrying spent fuel from **Japan** for reprocessing at La Hague, passed through the Panama Canal in early August and has duly docked in **France**. It may be recalled that the US government was said to oppose transport of MOX fuel through the Panama Canal. Nothing was said at the time about the transport of unreprocessed spent fuel. (**Reuters**, 9/8, in **UI News Briefing** 97.32; See also **Newsbrief** No. 38, page 17.)

- In the state of Utah, **United States**, a consortium of utilities has reached agreement with the Skull Valley Band of the Goshute Indian tribe to build and operate a private temporary storage facility for spent nuclear fuel on the Skull Valley reservation. An application has been filed with the US Nuclear Regulatory Commission (NRC). (**NucNet News**, 1/7)

- Also in the **United States**, it has been revealed that radioactive contamination has spread throughout the Connecticut Yankee plant that was shut down in 1996. Allegedly, events that had affected the integrity of the fuel in the reactor, in 1979 and in 1989, were ignored by the plant management with the result that contaminated liquids were spread to discharge channels and water wells, and beyond the immediate surroundings of the facility. Investigations are underway but so far there are no indications of radioactive contamination outside the plant perimeter. (**New York Times**, 17/9, 18/9, 4/10, 5/10; **Nucleonics Week**, 18/9)

I. Miscellaneous

- **United Nations** Secretary-General, Kofi Annan, in early August presented to a special meeting of the General Assembly his proposals for a reform of the United Nations, including the organisation's Secretariat. The Secretary-General's paper includes a proposal for the establishment of a Department for Disarmament and Arms Regulation, headed by an Under Secretary-General. The Department would, among other things, deal with the issues of nuclear non-proliferation and nuclear-weapon-free zones, and would serve as the Secretariat of the Conference on Disarmament. Since the proposal, of which the part immediately relevant to the above is reproduced below under **IV. Documentation**, will have financial consequences, it must be considered by the UN General Assembly at its 52nd regular session before it can be put into effect. (**Financial Times**, 17/7; **El Pais**, 17/7; **Report of the Secretary General Part 2: Measures and Proposals**; **Direct Information**)

- On 1 July, Mr. Luis Echavarri of **Spain**, assumed the duties of Director-General of the Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD) in Paris. (**NEA Information Communiqué** NEA/COM(97)10, 27/6)

II. PPNN Activities

- PPNN will hold the twenty second semi-annual meeting of its Core Group in Bangkok, Thailand from 21 to 23 November 1997. The meeting will follow a regional seminar on 'South East Asia: Regional Security and Nuclear Non-Proliferation' to be held in the same venue from 18 to 21 November. This seminar is being organised by PPNN in cooperation with the Institute of Security and International Studies, Chulalongkorn University, Bangkok; the Center for Non-Proliferation Studies, Monterey Institute of International Studies, USA and the Peace Research Institute, Frankfurt, Germany. It will be attended by officials and academics from all countries in the region, and from relevant extra-regional states.

- The third phase of PPNN's activities, focused upon the launch of the strengthened NPT review process, will end in December 1997 following the Bangkok meeting. Applications have been made to funding organisations for additional resources to continue the Programme through to the end of 2000, when the first complete cycle of the strengthened NPT review process will terminate. During the period 1998–2000 PPNN proposes to pay special attention to developing ideas for bridging the gap between the differing nuclear disarmament proposals and strategies being advanced by NPT parties. In anticipation of the Programme continuing into its fourth phase, plans are being developed to hold an international briefing seminar for officials from NPT states parties likely to attend the second session in Geneva of the Preparatory Committee for the 2000 NPT Conference. The seminar will be held at the Imperial Palace Hotel, Annecy, France from 27 February to 1 March 1998. Its title will be 'The 1998 Preparatory Committee for the 2000 NPT Review Conference: Issues and Options'.

III. Recent Publications

Books

Thérèse Delpech, 'L' Héritage nucléaire', Centre d'études et de recherches internationales de la Foundation nationale des sciences politiques, Editions Complexe, 159 pp.

Shai Feldman and Abdullah Toukan, *Bridging the Gap: A Future Security Architecture for the Middle East*, Carnegie Commission on Preventing Deadly Conflict, Rowman and Littlefield Publishers, Inc., 126 pp.

David Fischer, *A History of the International Atomic Energy Agency 1957–1995*, IAEA Publication in conjunction with the Monterey Institute of International Studies, approx. 500 pp.

Karl Grossman, *The Wrong Stuff: The Space Program's Nuclear Threat to Our Planet*, Common Courage Press, Monroe, ME, 223 pp.

Stansfield Turner, *Caging the Nuclear Genie: An American Challenge for Global Security*, Westview Press, 176 pp.

Various Authors, *International Atomic Energy Agency: Personal Reflections*, IAEA Publication, approx. 250 pp.

Articles

Amb. Munir Akram, 'Nuclear Disarmament: A Pending Priority' *UNIDIR Newsletter*, UNIDIR/97/2, Special Issue, pp. 16-18.

G. Berdennikov, 'Comprehensive Nuclear Test Ban Treaty', *International Affairs* (Moscow), Vol. 43, No. 3, pp. 139-151.

Frans Berkhout, 'Control and Disposition of Fissile Materials', *Inesap Information Bulletin*, No. 13, July, pp. 19-21.

Adam Bernstein, 'U.S. "Dual-Track" Proposal for Plutonium Disposition', *Inesap Information Bulletin*, No. 13, July, pp. 27-30.

Joëlle Bourgois, 'The CD at the Post-CTBT Crossroads' *UNIDIR Newsletter*, UNIDIR/97/2, Special Issue, pp. 18-21.

George Bunn, 'The Legal Status of U.S. Negative Security Assurances to Non-Nuclear Weapons States', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 1-17.

William Burr and Jeffrey Richelson, 'A Chinese puzzle', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 42-47.

Jason Cameron, '"93+2" Critique', in Marshall Beier and Steven Mataija (eds.), *Cyberspace and Outer Space: Transitional Challenges for Multilateral Verification in the 21st Century*, Centre for International and Security Studies, Toronto, pp. 191-206.

William S. Cohen, 'Terrorism, Weapons of Mass Destruction and US Security', Address at the Sam Nunn Policy Forum on Terrorism, Weapons of Mass Destruction, and US Security, The University of Georgia, Athens, April 28, *The Monitor: Nonproliferation, Demilitarization and Arms Control*, Vol. 3, No. 3, Summer, pp. 1, 3-6.

Tobias Damjanov, 'European NGO-Conference "Nuclear Weapons Free Europe"', *Inesap Information Bulletin*, No. 13, July, pp. 53.

Merav Datan, 'Model Nuclear Weapons Convention Released', *Inesap Information Bulletin*, No. 13, July, pp. 52.

Anatoli Diakov, 'U.S.-Russia Collaboration on Nuclear Weapons-Usable Materials', *Inesap Information Bulletin*, No. 13, July, pp. 24-26.

Steve Fetter, 'Verifying Nuclear Disarmament', *Inesap Information Bulletin*, No. 13, July, pp. 41-43.

Cathleen S. Fisher, 'Politics and Progress: Fulfilling the Promise of the Enhanced NPT Review Process', *Disarmament Diplomacy*, No. 16, June, pp. 2-5.

'Fissile Materials', NGO presentation to NPT PrepCom, *Inesap Information Bulletin*, No. 13, July, pp. 39-40.

'The Future of US Nuclear Weapons Policy', A Report From the National Academy of Sciences, *Arms Control Today*, Vol. 27, No. 3, May, pp. 14-18.

Alexander Glaser, Christoph Pistner, Wolfgang Liebert, 'Elimination of Nuclear Weapon-Usable Materials', *Inesap Information Bulletin*, No. 13, July, pp. 34-38.

Jozef Goldblat, 'Nuclear-Weapon-Free Zones: A History and Assessment', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 18-32.

Jozef Goldblat, 'The CTBT: Analysis and Assessment' *UNIDIR Newsletter*, UNIDIR/97/2, Special Issue, pp. 5-11

Frank Gibson Goldman, 'The International Ramifications of United States Counter-Proliferation Strategy: Problems and Prospects', *Newport Papers*, No. 11, Naval War College, Newport, R.I., April, 77 pp.

Goodpaster Committee, 'The Declining Utility of Nuclear Weapons', *The Washington Quarterly*, Vol. 20, No. 3, Summer, pp. 91-95.

Goodpaster Committee, 'Thoughts About Virtual Nuclear Arsenals', *The Washington Quarterly*, Vol. 20, No. 3, Summer, pp. 163-166.

Commander Robert Green, 'Why Nuclear Deterrence is a Dangerous Illusion', *AGNI*, Vol. 2, No. 3, January-May, pp. 12-20.

'Growing Electricity Demand and Role of Nuclear Power in Asia' [Unsigned report], *Atoms in Japan*, Vol. 41, No. 8, August, pp. 22-27.

Frank von Hippel & Suzanne Jones, 'The slow death of the fast breeder', *Bulletin of the Atomic Scientists*, Vol. 53, No. 5, September/October, pp. 46-51.

Fred C. Iklé, 'Facing Nuclear Reality', *The Washington Quarterly*, Vol. 20, No. 3, Summer, pp. 87-90.

A. Il'in, 'The First Testing of Russian Nuclear Weapons, *International Affairs*, Vol. 43, No. 2, pp. 203 -224.

Rodney W. Jones and Nikolai N. Sokov, 'After Helsinki, the hard work', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 26-30.

Scott Jones, 'An Enlarging Europe: Implications for EU Nonproliferation Export Controls', *The Monitor: Nonproliferation, Demilitarization and Arms Control*, Vol. 3, No. 3, Summer, pp. 15-18.

Martin Kalinowski, 'Fissile Cutoff: Overcoming the Disarmament Deadlock', *Inesap Information Bulletin*, No. 13, July, pp. 7-10.

Martin B. Kalinowski, 'Krypton-85 as Indicator for Plutonium Separation', *Inesap Information Bulletin*, No. 13, July, pp. 44-46.

Mustafa Kibaroglu, 'Turkey's Quest for Peaceful Nuclear Power', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 33-44.

Gregory Koblentz, 'Theater Missile Defense and South Asia: A Volatile Mix', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 54-62.

Andrew Koch and Jennifer Topping, 'Pakistan's Nuclear Weapons Program: A Status Report', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 109-113.

Andrew Koch, 'Yugoslavia's Nuclear Legacy: Should We Worry?', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 123-128.

Hans Kristensen, 'Targets of Opportunity', *Bulletin of the Atomic Scientists*, Vol. 53, No. 5, September/October, pp. 22-28.

'Leaving Behind The UNSCOM Legacy In Iraq': An Interview with Rolf Ekeus, *Arms Control Today*, Vol. 27, No. 4, June/July, pp. 3-6.

George Lewis and Theodore Postol, 'Portrait of a bad idea', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 18-25.

Richard G. Lugar, 'Terrorism, Weapons of Mass Destruction and US Security', Address at the Sam Nunn Policy Forum on Terrorism, Weapons of Mass Destruction, and US Security, The University of Georgia, Athens, April 28, *The Monitor: Nonproliferation, Demilitarization and Arms Control*, Vol. 3, No. 3, Summer, pp. 1, 6-12.

Allison Macfarlane, 'Immobilization of Excess Weapon Plutonium', *Inesap Information Bulletin*, No. 13, July, pp. 31-33.

Andrew Mack, 'Potential, not proliferation', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 48-53.

Marvin Miller and Frank von Hippel, 'Let's reprocess the MOX plan', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 15-17.

Tom Milne, 'A Role For Aldermaston in Verifying Nuclear Disarmament', *Bulletin of Arms Control*, No. 27, September, pp. 7-11.

James Clay Moltz, 'Missile Proliferation in East Asia: Arms Control vs. TMD Responses', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 63-71.

Kazuhisa Mori, 'Keep Alight the Torch of FBRs', *Atoms in Japan*, Vol. 41, No. 8, August, pp. 2-3.

Suzanna van Moyland, 'The International Atomic Energy Agency's Additional Protocol', *VERTIC Briefing Paper*, 97/2, July, 8 pp.

Suzanna van Moyland, 'A New Era in Safeguards: Assessing the IAEA Model Protocol', *Disarmament Diplomacy*, No. 16, June, pp. 5-11.

Brigadier Vijai K. Nair, 'US Nuclear Deterrence Policy: Pointers for India's Strategic Planners', *AGNI*, Vol. 2, No. 3, January-May, pp. 32-45.

Charles W. Nakhleh, 'Addressing the Implications of the Japanese Fuel Cycle through Transparency', *Non-Proliferation Review*, Vol. 4, No. 3, Spring-Summer, pp. 83-91.

Paul H. Nitze, 'Is It Time to Junk Our Nukes?', *The Washington Quarterly*, Vol. 20, No. 3, Summer, pp. 97-101.

Bruno Pellaud, 'International Verification of US Russian Materials Released for Storage and Disposition', *Journal of Nuclear Materials Management*, Vol. 25, No. 3, June, pp. 13-16.

'Plutonium: The First 50 Years', U.S. Department of Energy Reports (excerpt), *Inesap Information Bulletin*, No. 13, July, pp. 22.

'Plutonium Working Group Report', U.S. Department of Energy Reports (excerpt), *Inesap Information Bulletin*, No. 13, July, pp. 23.

Stephen Pullinger, 'Britain, Trident and Disarmament', *Disarmament Diplomacy*, No. 17, July/August, pp. 10-12.

Sir Michael Quinlan, 'The Future of Nuclear Weapons in World Affairs', *The Washington Quarterly*, Vol. 20, No. 3, Summer, pp. 137-141.

Sir Michael Quinlan, 'Nuclear Cart Before the Horse', *New Zealand Defence Quarterly*, No. 17, Winter, pp. 18-21.

M.V. Ramana, 'Hawks Take Flight: Fissile Cutoff and Indian Nuclear Debate', *Inesap Information Bulletin*, No. 13, July, pp. 10-12.

John R. Redick, 'Latin American Nuclear Arrangements: Implications for the Middle East', An address to the Second Workshop, The Middle East Security and Arms Control Project, Stockholm, Sweden, May 26, 15 pp.

Jürgen Scheffran, 'Nuclear Weapons Convention and Nuclear-Disarmament Negotiations', *Inesap Information Bulletin*, No. 13, July, pp. 13-16.

Leon V. Sigal, 'The North Korean Nuclear Crisis: Understanding the Failure of the 'Crime and Punishment' Strategy', *Arms Control Today*, Vol. 27, No. 3, May, pp. 3-13.

Steering Committee Project on Eliminating Weapons of Mass Destruction, *An American Legacy: Building a Nuclear-Weapon-Free-World*, The Henry L. Stimson Center, Washington D.C., March, 16 pp.

Jennifer Weeks, 'Sino-U.S. Nuclear Cooperation at a Crossroads', *Arms Control Today*, Vol. 27, No. 4, June/July, pp. 7-13.

Jonathan Weisman, 'Who's minding the store?', *Bulletin of the Atomic Scientists*, Vol. 53, No. 4, July/August, pp. 32-37.

Sir Michael Weston, 'The CTBT: Preparations for Entry into Force' *UNIDIR Newsletter*, United Nations, Geneva, UNIDIR/97/2, Special Issue, pp. 13-16.

Gilbert Wong, 'Listening for the Bomb', *New Zealand Defence Quarterly*, No. 17, Winter, pp. 14-17.

IV. Documentation

a. Statement by the Ministers of Foreign Affairs of the Republic of Kazakhstan, Kyrghyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan

Proliferation of nuclear weapons on the planet is the major threat to the survival of humanity. Nuclear weapons are able to destroy not only what has been created by mankind throughout the past centuries, but the very life on Earth.

In the epoch of nuclear disarmament it is necessary to work out a new world order concept based on the principles of refraining from the threat or use of force, as well as of respect of every nation's rights to self-determination: social, political and ideological, rejecting a policy aimed at the domination of one by another.

The Tashkent International Conference *Central Asia — A Nuclear-Weapon-Free Zone* (September 15–16, 1997) acknowledging indivisibility of regional and global security has reaffirmed the necessity of collective contribution to the progressive development of the world community.

Kazakhstan, Kyrghyzstan, Tajikistan, Turkmenistan and Uzbekistan being inspired by the awareness of common responsibility, proceeding from the persistent aspiration to take joint actions and expressing the unanimous opinion of their peoples, the states which have joined the Treaty on the Non-Proliferation of Nuclear Weapons, and the Almaty Declaration:

- announce the necessity of declaring Central Asia a nuclear-weapon-free zone, as an essential element of strengthening regional security;
- welcome the 'Principles and Objectives' set forth in the documents of the Nuclear Non-Proliferation Treaty Review and Extension Conference of 1995;
- welcome the adoption of the Comprehensive Test Ban treaty opened for signature by other states on September 24, 1996, and urge all states, which have not joined it, to sign this Treaty;
- express their satisfaction with the fact that the countries, which voluntarily assumed the commitments under the agreements on nuclear-weapon-free zones, constitute a considerable part of the world, thus promoting a new nuclear non-proliferation culture;
- believe that the establishment of a nuclear-weapon-free zone in Central Asia meets the interests of national, regional and global security;
- call upon the five permanent members of the United Nations Security Council, as well as other states to support the initiative on the establishment of a nuclear-weapon-free zone in Central Asia, and to provide every possible assistance in its creation;
- urge other states to provide assistance in the rehabilitation of the territories, particularly, polluted by radioactive wastes, considering it essential to ensure the ecological safety of the region;
- confirm their readiness to expand and strengthen cooperation in the field of utilizing nuclear energy for peaceful purposes;
- request the United Nations to set up a United Nations group of experts, with the participation of experts from regional groups, to elaborate the forms and elements of preparation and implementation of an agreement on the establishment of a nuclear-weapon-free zone in Central Asia.

For the Republic of Kazakstan, *Erlan Idrisov, First Deputy Foreign Minister*
For the Kyrghyz Republic, *Muratbek Imanaliev, Foreign Minister*
For the Republic of Tajikistan, *Erkin Rakhmatullaev, First Deputy Foreign Minister*
For Turkmenistan, *E. A. Kepbanov Deputy Foreign Minister*
For the Republic of Uzbekistan, *Abdulaziz Kamilov Foreign Minister*

b. Statement to the Forty-First Session of the General Conference of the International Atomic Energy Agency, 29 September 1997 [Extract]

...

Nuclear Safety

...

A question which has received much attention in recent years, and which relates to radiation protection, is to what extent past nuclear weapons tests still leave any radiological hazards. In several cases the IAEA has been asked to answer this question and former nuclear weapon test sites — in Kazakhstan, the Marshall Islands and French Polynesia — have been the subject of examination. The studies performed under Agency auspices with the help of international scientific experts should go a long way to providing the countries concerned and their neighbours with a greatly improved knowledge and understanding of the real radiological situations — which, I am happy to note, have proved to be far less worrisome than some had feared.

Verification

Iraq

Security Council resolution 687 which was adopted in the spring of 1991 decided that Iraq should make a declaration within 15 days describing its nuclear weapons related assets, that the IAEA should urgently inspect and destroy, remove or render harmless what was of relevance for a weapons capacity and thereafter implement monitoring and verification measures to detect any revival of Iraq's clandestine nuclear programme. Due to Iraq's policy of concealment and obstruction — mixed with spells of co-operation — the schedule envisaged by the Security Council could not be followed. The IAEA has been obliged to rely on the results of its own inspections, information from suppliers and governments, information obtained from Iraq and its own expertise and knowledge to form a technically coherent picture of Iraq's vast programme. The completeness of this picture has been and remains decisive for the fulfilment of the mandate to identify, destroy, remove or render harmless relevant material, installations and equipment.

Through more than six years of investigations the blank spots in the picture have become fewer. Yet we can be sure that there still remains more to learn and it is not impossible that some equipment may still be undetected. Only two years ago a considerable amount of additional documentation — and of some material — was handed over by Iraq following the departure from Iraq of the late Lt. General Hussein Kamel. However, as fewer questions pose themselves, the emphasis is shifting to ongoing monitoring and verification which should allow us to strike the alarm if a renewal of the nuclear programme were to be undertaken.

Strengthening of Safeguards

The discovery in 1991 that Iraq had been able undetected to mount a secret programme of uranium enrichment and weaponization confirmed that the safeguards system of the Agency had to be strengthened. Many measures which fall within the existing authority of the Agency were adopted without much delay and the model additional protocol will — when accepted by States — add some important new teeth to the system and introduce some new cost-effective techniques.

I welcome this instrument and I express appreciation to the six countries that are signing it at this juncture. Momentum is thereby maintained. I trust other States will follow soon. For the Secretariat there will be a great challenge to ensure early, smooth and efficient implementation.

While the occurrence of the case of Iraq convinced all of the need to strengthen safeguards, our experiences in Iraq, although based on inspection rights that went vastly beyond what would be accepted by States in normal circumstances, have suggested important new approaches and techniques, some of which are prescribed in the additional protocol.

Thus experience in Iraq broadened the perspective of the Agency in the field of verification. We are now better able to tailor-make verification schemes to fit various needs that may arise — in nuclear-weapon-free zones, in a cut-off agreement and other contexts.

DPRK

In the DPRK the Agency is, of course, asserting its right and duty to perform inspection under an NPT-type safeguards agreement, which remains in force. But at the same time we are verifying a freeze of the DPRK nuclear programme at the request of the Security Council and with periodic reporting to the Council. I regret to report that the measure of co-operation which we receive from the DPRK has not increased since last year.

Accordingly the correctness and completeness of the initial inventory of plutonium declared by the DPRK cannot be verified.

Trilateral

During the General Conference last year an arrangement was made between the then US Secretary of Energy, Ms. O'Leary, the Russian Minister of Atomic Energy, Mr. Mikhailov, and myself, to examine the modalities of possible Agency verification in the United States and Russia that nuclear material transferred from the defence sector to the peaceful sector, notably fissile material from dismantled nuclear weapons, remained peacefully stored or were rendered unusable for weapons purposes. A great deal of exploratory discussions have been pursued on this subject in the past year and I, myself, recently visited the Mayak facility under construction in the Urals, where large quantities of fissile material from dismantled Russian nuclear weapons are to be stored. I am pleased that this General Conference is offering an opportunity for a further round of discussions.

Cut-Off

The proposal for a so-called 'cut-off' agreement to stop all production of fissile material for weapons purposes has not moved forward in the past year. It is to be hoped that the talks will soon be reactivated. While verification of the peaceful storage or use of fissile material from dismantled weapons would give confidence that no such material goes back into new weapons, verification of a 'cut-off' would give the world confidence that no fresh fissile material is produced for new bombs. The two measures would complement each other and point toward the long-term goal of a nuclear weapon free world.

Many questions need to be answered, however — not least about the modalities of verification and how it would be financed. It might perhaps be tempting to suggest that the States responsible for the production of fissile material which was produced for weapons or was once placed in weapons should, themselves, pay for the verification. However, such a regime would make the verification financially dependent upon the party where verification is to take place. Perhaps some thought should already now begin to be devoted to a special nuclear disarmament verification fund based on long term voluntary contributions.

Trafficking

As is apparent from seizures made in recent years of small quantities of nuclear materials and of radioactive sources, criminal attempts are made to exploit a black market in these items. The illicit trafficking we have seen raises both health and proliferation risks. In response to the interest of Member States, the Agency has developed a programme which seeks to supplement the action of governments and to co-ordinate a variety of measures directed at this problem. In some States the Agency is offering advice on appropriate legislation and standards of physical protection. In others training is provided. In addition the Agency has developed a database containing official information about reported cases. It will now be explored whether some of the relevant legal international instruments — notably the Convention on Physical Protection — should be updated.

...

The IAEA as a Member of the UN System

...

In the area of arms control the IAEA is no longer the only global inter-governmental organization. The Organization for the Prohibition of Chemical Weapons is in operation at the Hague and the Provisional Technical Secretariat for the Comprehensive Test Ban Treaty is now in place here in Vienna. Like the IAEA these organizations have important verification functions. We look forward to co-operation and enriching discussions about common objectives and varying methods of work. While the UN Security Council is responsible for any enforcement actions regarding weapons of mass destruction, organizations like ours will be the watchdogs of the system.

I am optimistic about the long term prospects of nuclear arms control — including the currently delayed cut-off agreement. Let me end by citing a remarkable recent speech in which the President of Brazil announced the intention of his Government to supplement Brazil's adherence to the Tlatelolco Treaty by adherence to the Non-Proliferation Treaty:

> The atomic bomb is losing its juridical legitimacy and its political importance. Earlier, nuclear weapons were central to the military planning of the Superpowers. It was thought that the bomb was necessary to attain the status of a Power.
>
> Nowadays, in contrast, the atomic bomb is seen merely as a source of risk, costs and uncertainty. Even in the nuclear Powers, public opinion is recognizing that the bomb only increases insecurity. Meanwhile, non-nuclear countries, stronger in economic production and trade, in social cohesion and political stability, have gained great influence in international relations.
>
> The essential power factors in today's world are competitiveness and social cohesion. It is in this direction that we must concentrate all our efforts.

I subscribe to these thoughts. I will only add that as the sun is slowly setting on the nuclear weapons era that sunset will need to be closely watched. There will be no lack of work for the IAEA.

c. International Atomic Energy Agency General Conference Resolutions

GC(41)/44 — Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System and Application of the Model Protocol

[Adopted on 3 October 1997, without a vote]

The General Conference,

(a) *Recalling* resolution GC(40)/RES/16,

(b) *Convinced* that the Agency's safeguards can promote greater confidence among States and thus contribute to strengthening their collective security,

(c) *Considering* the Treaty on the Non-Proliferation of Nuclear Weapons, the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, the South Pacific Nuclear Free Zone Treaty, the Treaty establishing the African Nuclear-Weapon-Free Zone and the Treaty on

the Southeast Asia Nuclear-Weapon-Free Zone and the Agency's essential role in applying safeguards in accordance with the relevant articles of these treaties, and *noting* the outcome of the 1995 Review and Extension Conference on the Treaty on the Non-Proliferation of Nuclear Weapons,

(d) *Noting* that decisions adopted by the Board of Governors aimed at further strengthening the effectiveness of Agency safeguards should be supported and implemented and that the Agency's capability to detect undeclared nuclear activities should be increased,

(e) *Stressing* the importance of the Model Additional Protocol approved on 15 May 1997 by the Board of Governors aimed at strengthening the effectiveness and improving the efficiency of the safeguards system,

(f) *Recalling* the interpretation given to Article 1 of the Model Protocol, according to which, for States that are members of international institutions that are party to safeguards agreements with the IAEA, that text does not prejudge the legal modalities which those States and international institutions adopt regarding the conclusion of additional protocols or the division of responsibilities in their implementation, and

(g) *Stressing* that the strengthening of the safeguards system should not entail any decrease in the resources available for technical assistance and co-operation and that it should be compatible with the Agency's function of encouraging and assisting the development and practical application of atomic energy for peaceful uses and with adequate technology transfer,

1. *Requests* the Secretariat to pursue the implementation of Part 1 measures of Programme 93+2 without delay as far available resources permit;
2. *Recalls* the need for all concerned States and other Parties to safeguards agreements with the Agency to supply the Agency with all the information require under Part 1 of Programme 93 +2;
3. *Stresses* the need for effective safeguards in order to prevent the use of nuclear energy for prohibited purposes in contravention of safeguards agreements, and *underlines* the vital importance of effective safeguards for facilitating co-operation in the field of peaceful uses of nuclear energy;
4. *Affirms* that strengthening the effectiveness and improving the efficiency of the safeguards system with a view to detecting undeclared nuclear activities must be implemented rapidly and universally by all concerned States and other Parties in compliance with their respective international commitments;
5. *Supports* the Board's decision to request the Director General to use the Model Protocol as the standard for additional protocols that are to be concluded by States and other parties to comprehensive safeguards agreements with the Agency, which should contain all of the measures in the Model Protocol;
6. *Supports* the Board's decision to request the Director General to negotiate additional protocols or other legally binding agreements with nuclear-weapon States incorporating those measures provided for in the Model Protocol that each nuclear-weapon State has identified as capable of contributing to the non-proliferation and efficiency aims of the Protocol, when implemented with regard to that State, and as consistent with that State's obligations under Article I of the NPT;
7. *Supports* the Board's decision to request the Director General to negotiate additional protocols with other States that are prepared to accept measures provided for in the Model Protocol in pursuance of safeguards effectiveness and efficiency objectives;
8. *Requests* all concerned States and other Parties to safeguards agreements to sign additional protocols promptly so that, once signed, they can be ratified or accepted without delay; and
9. *Requests* the Director General to report on the implementation of this resolution to the General Conference at its forty-second regular session.

GC(41)/42 — The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

[Adopted on 3 October 1997 without a vote]

The General Conference,

(a) *Recalling* resolution GC(40)/RES/11,

(b) *Expressing* its appreciation to the Open-ended Group of Legal and Technical Experts for the completion of its task,

(c) *Expressing* its gratitude to the Secretariat for the support it gave in the preparation of the Convention,

(d) *Stressing* the important role of the Agency in acting as a driving force in nuclear safety through its various safety programmes and initiatives, and

(e) *Recognizing* that decisions on implementation of the Convention are the responsibility of States Parties,

1. *Welcomes* the adoption of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management in Vienna on 5 September
2. *Appeals* to all States to sign and subsequently ratify, accept or approve the Convention, so that it may enter into force as soon as possible;
3. *Expresses* the hope that the Convention will obtain the widest possible adherence; and
4. *Requests* the Secretariat to give its support to signatory and other interested States in preparing for implementation of the Convention.

GC(41)/33 — Implementation of the Agreement Between the Agency and the Democratic People's Republic of Korea for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons

[Adopted on 3 October 1997 by 77 votes in favour, 0 against, and 11 abstentions]

The General Conference,

(a) *Recalling* the Board of Governors' resolutions GOV/2436 of 25 February 1993, GOV/2639 of 18 March 1993, GOV/2645 of 1 April 1993, GOV/2692 of 23 September 1993, GOV/2711 of 21 March 1994 and GOV/2742 of 10 June 1994 and General Conference resolutions GC(XXXVII)/RES/624 of 1 October 1993, GC(XXXVIII)/RES/16 of 23 September 1994, GC(39)/RES/3 of 22 September 1995 and GC(40)/RES/4 of 20 September 1996,

(b) *Noting* the Director General's report contained in document GC(41)/17,

(c) *Recalling* further resolution 825 (1993) adopted by the Security Council of the United Nations on 11 May 1993 and the 31 March 1994, 30 May 1994 and 4 November 1994 statements by the President of the United Nations Security Council, particularly the request to take all steps the Agency may deem necessary to verify full compliance by the Democratic People's Republic of Korea (DPRK) with its safeguards agreement with the Agency,

(d) *Noting* that the DPRK has decided to remain a party to the Treaty of the Non-proliferation of Nuclear Weapons and reaffirming that the IAEA-DPRK safeguards agreement (INFCIRC/403) under the Treaty remains binding and in force,

(e) *Noting* also the stated intention of the DPRK to come into full compliance with the safeguards agreement and the continuing IAEA–DPRK discussions on outstanding safeguards issues,

(f) *Noting* with regret that in these discussions no progress has been made on important issues such as the preservation of information, and

(g) *Regretting* the withdrawal of the DPRK from the Agency and expressing the hope that the DPRK will rejoin,

1. *Strongly* endorses actions taken by the Board of Governors and commends the Director-General and the Secretariat for their impartial efforts to implement the IAEA–DPRK safeguards agreement;
2. *Commends* the Secretariat for its efforts to monitor the freeze of specified facilities in the DPRK as requested by the United Nations Security Council;
3. *Expresses* concern over the continuing non-compliance of the DPRK with the IAEA-DPRK safeguards agreement and calls upon the DPRK to comply fully with that safeguards agreement;
4. *Urges* the DPRK to co-operate fully with the Agency in the implementation of the safeguards agreement and to take all steps the Agency may deem necessary to preserve all information relevant to verifying the accuracy and completeness of the DPRK's initial report on the inventory of nuclear material subject to safeguards until the DPRK comes into full compliance with its safeguards agreement; and
5. *Decides* to remain seized of this matter and include in the agenda for its forty-second regular session an item entitled 'Implementation of the agreement between the Agency and the Democratic People's Republic of Korea for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons'.

GC(41)/35 — Implementation of United Nations Security Council Resolutions Relating to Iraq

[Adopted on 3 October 1997 with 75 votes in favour, 0 against and 15 abstentions]

The General Conference,

(a) *Recalling* United Nations Security Council resolutions 687, 707, 715 and 1051,

(b) *Recalling* further the resolutions of the thirty-fifth (1991), thirty-sixth (1992), thirty-seventh (1993), thirty-eighth (1994), thirty-ninth (1995) and fortieth (1996) General Conferences (GC(XXXV)/RES/568, GC(XXXVI)/RES/579, GC(XXXVII)/RES/626, GC(XXXVIII)/RES/19, GC(39)/RES/5 and GC(40)/RES/21),

(c) *Taking note* of the Director General's report contained in document GC(41)/20, his introductory statement of the forty-first General Conference, his second and third consolidated six-monthly reports to the Security Council (GOV/INF/801 and GOV/INF/810) and his report to the Board of Governors (GOV/2931),

(d) *Reaffirming* the need for full implementation by Iraq of Security Council resolutions 687, 707, 715 and 1051,

(e) *Deploring* Iraq's obstruction of aircraft used by the IAEA in Iraq,

(f) *Noting* that Iraq has reaffirmed unconditionally its obligations under the NPT and its commitment to full compliance with its safeguards agreement with the IAEA,

(g) *Noting* also that progress continues to be made in the review of Iraq's Full, Final and Complete Declaration (FFCD) and that further progress has been made regarding the content and accuracy of Iraq's six-monthly declarations under the Ongoing Monitoring and Verification Plan,

(h) *Noting* with concern, however, that Iraq has still not provided the Action Team with all the information that it has requested,

1. *Commends* the Director General and the Agency's Action Team for their strenuous efforts to implement Security Council resolutions 687, 707, 715 and 1051 and requests them to continue their efforts to fulfill their mandate;
2. *Invites* the Director General and the Action Team to continue to pursue vigorously the implementation of the Ongoing Monitoring and Verification Plan;
3. *Welcomes* the continued operation of the export/import monitoring mechanism called for under Security Council resolution 1051;
4. *Emphasizes* that the completeness of the Agency's understanding of Iraq's efforts to acquire nuclear weapons remains decisive for the fulfillment of the Agency's mandate to identify, destroy, remove or render harmless relevant materials, installations and equipment:
5. *Calls* upon Iraq to co-operate fully with the Action Team in meeting its requests for information and in achieving the complete and long-term implementation of the relevant Security Council resolutions;
6. *Stresses* Iraq's obligation to hand over to the Action Team without further delay currently undisclosed nuclear-weapon-related equipment, material and information and to allow the Action Team immediate, unconditional and unrestricted rights of access, in accordance with Security Council resolution 707;
7. *Stresses* that the Agency's Action Team will continue to exercise its right to investigate further any aspects of Iraq's past nuclear weapons capability, in particular as regards any further relevant information that Iraq may still be withholding from the Agency; and
8. *Requests* the Director General to report the views of the General Conference to the Secretary-General of the United Nations and to report to the Board of Governors and to the forty-second regular session of the General Conference on his efforts to implement Security Council resolutions 687, 707, 715 and 1051 and decides to remain seized of this issue.

GC(41)/38 — Measures Against Illicit Trafficking in Nuclear Materials and other Radioactive Sources

[Adopted on 3 October 1997, without a vote]

The General Conference,

(a) *Recalling* its resolutions GC(XXXVIII)/RES/I 5, GC(39)/RES/18 and GC(40)/RES/17 on measures against illicit trafficking in nuclear materials and other radioactive sources,

(b) *Noting* the programme for preventing and combatting illicit trafficking in nuclear material agreed upon by the participants in the Moscow Nuclear Summit of April 1996 and contained in document INFCIRC/509, and

(c) *Welcoming* the confirmation by participants in the Denver Summit of June 1997 of their commitment to the 'Programme for Prevention and Combatting Illicit Trafficking in Nuclear Materials'.

1. *Takes* note of the progress report submitted by the Secretariat in document GC(41)/21;
2. *Welcomes* the activities in the fields of prevention, response, training and information exchange undertaken by the Secretariat in support of efforts against illicit trafficking;
3. *Invites* the Director General to continue working during the coming year in accordance with the relevant conclusions of the Board of Governors; and
4. *Requests* the Director General to submit a report to the General Conference at its next regular session on activities undertaken by the Agency in the intervening period.

GC(41)/47 — Application of IAEA Safeguards in the Middle East

[Adopted on 3 October 1997, without a vote]

The General Conference,

(a) *Recognizing* the importance of the non-proliferation of nuclear weapons — both globally and regionally — in enhancing international peace and security,

(b) *Mindful* of the usefulness of the Agency's safeguards system as a reliable means of verification of the peaceful uses of nuclear energy,

(c) *Concerned* by the grave consequences, endangering peace and security, of the presence in the Middle East region of nuclear activities not wholly devoted to peaceful purposes,

(d) *Welcoming* the initiatives regarding the establishment of a zone free of all weapons of mass destruction, including nuclear weapons, in the Middle East and recent initiatives regarding arms control in the region,
(e) *Recognizing* that full realization of these objectives would be promoted by participation of all States of the region,
(f) *Commending* the efforts of the Agency concerning the application of safeguards in the Middle East, and the positive response of some States in concluding a full-scope safeguards agreement, and
(g) *Recalling* its resolution GC(40)/RES/22,

1. *Takes note* of the Director General's report in document GOV/2941-GC(41)/16;
2. *Affirms* the urgent need for all States in the Middle East to forthwith accept the application of full-scope Agency safeguards to all their nuclear activities as an important confidence-building measure among all States in the region and as a step in enhancing peace and security in the context of the establishment of a nuclear-weapon-free zone (NWFZ);
3. *Calls* upon all parties directly concerned to consider seriously taking the practical and appropriate steps required for the implementation of the proposal to establish a mutually and effectively verifiable NWFZ in the region, and invites the countries concerned to adhere to international non-proliferation regimes, including the Treaty on the Non-Proliferation of Nuclear Weapons, as a means of complementing participation in a zone free of all weapons of mass destruction in the Middle East and of strengthening peace and security in the region;
4. *Takes* note of the importance of the ongoing bilateral Middle East peace negotiations and the activities of the multilateral working group on Arms Control and Regional Security in promoting mutual confidence and security in the Middle East, including establishment of a NWFZ, and calls on the Director General, as requested by the participants, to render all necessary assistance to the working group in promoting that objective;
5. *Requests* the Director General to continue consultations with the States of the Middle East to facilitate the early application of full-scope Agency safeguards to all nuclear activities in the region as relevant to the preparation of model agreements, as a necessary step towards the establishment of a NWFZ in the region, referred to in resolution GC(XXXVII)/RES/627;
6. *Calls* upon all States in the region to extend their fullest co-operation to the Director General in the fulfilment of the tasks entrusted to him in the preceding paragraph;
7. *Further* calls upon all States in the region to take measures, including confidence-building and verification measures, aimed at establishing a NWFZ in the Middle East;
8. *Calls* upon all other States, especially those with a special responsibility for the maintenance of international peace and security, to render all assistance to the Director General by facilitating the implementation of this resolution; and
9. *Requests* the Director General to submit to the Board of Governors and to the General Conference at its forty-second regular session a report on the implementation of this resolution and to include in the provisional agenda for that session an item entitled 'Application of IAEA safeguards in the Middle East'.

GC(41)/46 — Amendment of Article VI of the Statute
[Adopted on 3 October 1997, without a vote]

The General Conference,
(a) *Recalling* its resolutions GC(XXI)/RES/353, GC(XXII)/RES/361, GC(XXIII)/RES/370, GC(XXIV)/RES/378 and GC(XXV)/RES/389 concerning the amendment of Article VI.A.2 of the Statute,
(b) *Bearing* in mind the fundamental structural changes that have taken place in the past two decades in international relations, particularly in the nuclear community resulting in the under-representation of other areas on the Board of Governors of the IAEA,
(c) *Noting* the interest of Member States of all regions in considering Board membership in the light of present-day geopolitical and technical realities and *recognizing* that there is a widely held view to expand the size and composition of the Board,
(d) *Convinced* of the urgent need to implement all relevant General Conference resolutions and decisions relating to amendment of Article VI, and especially resolution GC(40)/RES/20, which calls for the submission of a finalized formula to be approved by the General Conference at its forty-first regular session in accordance with Article XVIII of the Statute,
(e) *Taking note* with appreciation of the efforts undertaken by the Chairpersons of the Open-ended Consultative Group and of the progress achieved in this regard,
(f) *Noting with regret* that the Board of Governors at its June and September sessions was not in a position to submit a report on a finalized formula for amending Article VI for consideration and approval by the General Conference, as requested in resolution GC(40)/RES/20,
(g) *Confident* that the General Conference will implement its resolutions and decisions relating to the amendment of Article VI at its forty-second regular session at the latest,

1. *Expresses* appreciation for the efforts of the Chairman of the Board of Governors and *takes note* of the reports contained in documents GC(41)/23 and GC(41)/24;
2. *Welcomes* the proposal submitted by Sudan on behalf of the African Group as contained in Appendix IV to document GC(41)/11, the proposal submitted by Canada as contained in Appendix II to document GC(41)/11 (as part of the Chairman's package), and the proposal submitted by Morocco as contained in Appendix V to document GC(41)/11 and *recognizes* the urgent need to take fully into consideration the momentum they have brought to the consultation process;
3. *Requests* the Board of Governors to develop within a timetable a process of negotiations among Member States, *taking account* of the above proposals, and to submit its report on a finalized formula for approval by the General Conference at its forty-second regular session in accordance with Article XVIII of the Statute; and
4. *Invites* the Director General to report to the Board of Governors and to the General Conference at its forty-second session on the result achieved in the implementation of the present resolution.

d. Reform at the UN/Track 2/Report of the Secretary-General/Part II: Measures and Proposals: Peace, Security and Disarmament/Focusing on Substantive Priorities/Disarmament and Regulation of Armaments

122. Disarmament is a central issue on the global agenda. With the end of the superpower rivalry, nations everywhere have come to recognize their stake in the success of multilateral negotiations and monitoring of weapons developments. As a consequence, the United Nations has taken centre stage in the worldwide effort to limit both weapons and conflict. Within the framework of the Conference on Disarmament and the General Assembly, significant advances have been made in the establishment and consolidation of multilateral legal instruments and nuclear-weapon-free zones. A valuable role has also been played by the Disarmament Commission.

123. The momentum towards nuclear disarmament has increased significantly with the signing of the Comprehensive Nuclear Test Ban Treaty and its endorsement by the General Assembly; the indefinite extension of the Nuclear Non-Proliferation Treaty (NPT); the establishment of the African Nuclear-Weapon-Free Zone; efforts to bring fully in force the Treaty of Bangkok, which establishes a Nuclear-Weapon-Free-Zone in South East Asia; and the

strengthening of NPT safeguards by the International Atomic Energy Agency. Other positive developments have been the entry into force of the Chemical Weapons Convention and the strengthening of the prohibition against biological weapons. Recent progress in the effort to reduce and eliminate land mines is also of crucial importance to the United Nations.

124. The emergence of new dangers and actors has added new urgency to the tasks that the United Nations is called upon to play in the area of disarmament. In the post-Cold War period, there is a growing threat from the spread of nuclear weapons technology and material, as well as a wider interest in acquiring biological and chemical weapons and delivery means for such weapons. Regional warlords, criminal syndicates and various terrorist groups have, during recent years, become involved in trading with and acquisition of weapons of mass destruction. The extensive use and destructive power of land mines in areas of armed conflict and the flow of conventional weapons and small arms into the hands of civilians have become items in the international agenda and have often to be addressed in the context of peacekeeping operations.

125. A managerial reorganization of Secretariat capacities will now be effected so that a structure will be in place to respond effectively to the priorities of Member States in the disarmament area. A new Department for Disarmament and Arms Regulation will be established replacing the Centre for Disarmament Affairs. It will be based in New York to ensure effective interaction with the General Assembly, the Security Council, the Office of the Secretary-General and relevant United Nations departments. Since the Conference on Disarmament meets in Geneva for 3-4 months every year, it will require continuing support. Therefore, existing staff capacity to support the Conference on Disarmament, the monitoring of multilateral disarmament treaties and conventions, fellowship and training programmes and UNIDIR will continue to be maintained in Geneva. The Director-General of the United Nations offices in Geneva will continue to act as the Secretary General for the Conference on Disarmament, reporting Directly to the Secretary-General.

Action 6: A Department for Disarmament and Arms Regulation, headed by an Under-Secretary-General, will be established to develop policies and proposals and to coordinate them with the entities concerned

126. Taking into account new developments and trends indicated above, Member States may consider it appropriate to review the current multilateral negotiating or deliberative structures and their agendas with a view to updating and rationalizing them.

Recommendation: That the General Assembly undertake a review of the work of the Disarmament Commission and the First Committee with a view to updating, rationalizing and streamlining their work.

V. Comments From Readers/Corrections

September 24, 1997

To the Editor:

An item in the PPNN Newsbrief (Second Quarter 1997) describes critiques by the International Atomic Energy Agency (IAEA) and Sandia National Laboratories of a report that the Nuclear Control Institute (NCI) submitted last year to the International Maritime Organization (IMO). The NCI report, prepared by Dr. Edwin Lyman, NCI's scientific director, discusses unresolved safety issues associated with the marine transport of vitrified high-level radioactive waste (VHLW), and uses Nuclear Energy Agency data to show that a severe accident in coastal waters involving a VHLW transport ship could result in significant health consequences to consumers of local marine products. This finding contradicts a highly publicized Japanese study that projected negligible radiation exposure to the public from such an accident.

NCI has reviewed both the IAEA and Sandia documents in detail and found that they provide few specifics to support their conclusions, contain numerous misleading statements and make technical and numerical errors. Indeed, the IAEA's critique does not increase understanding of the safety of maritime transport of VHLW. Instead, it over-complicates key issues and fails to resolve them.

The PPNN Newsbrief discusses neither the substance of the original NCI report nor the IAEA's concession that the report '...in general does a mathematically correct analysis of the conditions it analyzes.' Moreover, the IAEA critique does not dispute that the consequences of the accident specified in the NCI report could be severe. In fact, another IAEA report which became public this year acknowledged that 'if a large irradiated fuel package were to be lost on the continental shelf, some large exposures could result.' The IAEA's criticism of the NCI report can be reduced to the questionable claim that severe accidents are so improbable that they are not worthy of consideration. As the NCI report shows, the uncertainties associated with the system currently utilized by Pacific Nuclear Transport Limited (PNTL) for French marine VHLW shipments are so large that assertions that it is invulnerable to severe accidents are not technically justified.

NCI's original report 'The Sea Transport of Vitrified High-Level Waste: Unresolved Safety Issues', and its rebuttal of the IAEA and Sandia critiques, can be found on the World-Wide Web at www.nci.org/nci/seatrans.htm.

Sincerely,
Paul Leventhal
President
Nuclear Control Institute

The Programme for Promoting Nuclear Non-Proliferation and the Newsbrief

The **Newsbrief** is part of the outreach effort which constitutes a major element of the Programme for Promoting Nuclear Non-Proliferation (PPNN). It is addressed to an audience interested in the subject of nuclear (non-)proliferation, to inform and help them alert their respective environments to the issue of nuclear non-proliferation.

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